U. S. DEPARTMENT OF THE INTERIOR

PROTOTYPE OIL SHALE LEASING PROGRAM

OIL SHALE TRACT C-b

DEVELOPMENT MONITORING REPORT #2

(October 1978 through April 1979)

Submitted to:

Mr. Peter A. Rutledge
Area Oil Shale Supervisor
Conservation District
U. S. Geological Survey
Grand Junction, Colorado

By:

C-b SHALE OIL PROJECT

OCCIDENTAL OIL SHALE, INC., LESSEE

JULY 15, 1979

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SUPPLEMENTAL DATA
REPORT

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AB20
JUNE 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
2	***	***	***	***	***	***	***	***	***	***	270	270	275	292	275	295	315	5	52	90	110	105	220	0	299	1.3
3	100	100	110	100	100	112	90	90	290	292	270	275	292	290	315	350	0	112	100	***	340	270	***	247	****	****
4	260	60	15	120	100	90	90	290	280	280	285	290	157	140	225	292	320	135	300	290	160	90	90	45	****	****
5	80	90	105	90	100	95	100	90	270	280	350	320	270	350	110	100	100	112	112	110	***	100	100	100	20	0.6
6	112	112	120	130	135	135	125	100	305	292	270	280	***	320	320	310	285	290	290	85	75	100	95	90	303	0.5
7	100	112	135	125	125	125	125	125	315	300	270	305	350	350	337	315	315	0	20	67	90	100	110	125	44	0.8
8	125	125	125	125	115	100	112	135	130	290	270	270	270	280	265	290	292	320	245	40	80	100	95	125	165	0.4
9	135	130	112	130	112	112	130	130	157	180	210	200	202	205	220	225	220	220	157	115	110	100	55	70	169	2.5
10	112	90	90	90	110	112	130	160	180	225	210	180	215	220	220	225	225	225	220	200	160	130	90	290	191	2.8
11	280	290	337	10	90	90	90	305	290	310	315	300	292	292	292	292	305	300	320	22	112	112	90	100	307	2.0
12	100	110	112	112	105	120	120	135	290	292	292	202	180	157	180	220	202	225	225	157	110	112	110	125	166	1.9
13	100	100	112	100	100	100	90	135	150	160	170	175	170	220	205	225	247	230	230	180	100	112	100	100	160	2.4
14	90	115	112	100	100	100	100	125	180	195	195	180	202	180	205	190	225	220	212	140	112	112	112	100	163	2.4
15	100	100	100	100	100	112	105	125	175	202	220	180	180	210	225	230	225	225	225	230	90	100	95	100	176	2.5
16	100	95	95	95	100	100	125	135	170	180	202	220	220	225	220	230	230	205	202	***	***	112	110	100	186	2.6
17	90	100	100	100	100	100	95	315	315	180	292	330	270	292	285	292	295	315	320	45	100	125	112	95	320	0.8
18	105	105	120	100	120	135	135	112	95	157	160	170	190	180	202	175	180	202	220	202	112	100	100	100	158	2.8
19	***	100	30	100	100	90	90	95	292	292	300	300	292	300	292	270	292	305	330	355	90	125	135	125	303	1.7
20	125	120	90	125	135	135	135	225	300	270	292	292	275	***	***	***	292	250	190	202	90	112	135	135	182	0.8
21	150	150	112	95	100	130	100	112	202	202	230	240	220	202	210	225	225	205	202	165	100	112	130	135	178	2.5
22	130	112	100	112	112	112	120	130	215	315	***	202	210	202	240	247	247	240	225	157	112	105	112	112	183	1.8
23	112	112	112	125	135	112	95	120	220	220	202	185	210	225	240	247	220	230	230	160	105	112	120	105	179	2.3
24	95	112	120	120	112	115	130	247	225	225	185	202	180	202	235	247	250	247	230	210	120	130	210	215	202	3.0
25	190	135	130	120	135	157	190	260	315	350	320	310	***	22	280	315	315	310	310	350	125	112	112	112	312	1.3
26	112	112	112	112	112	120	135	***	***	270	280	225	230	202	202	202	230	202	220	***	112	150	140	130	183	2.0
27	130	135	135	130	120	120	135	135	180	180	202	260	215	202	202	225	202	202	175	135	95	120	110	110	168	3.0
28	120	112	112	135	120	112	125	112	180	220	260	247	***	300	292	265	125	120	112	125	120	135	80	112	137	2.0
29	135	130	135	140	140	140	160	160	130	320	310	315	270	150	***	90	120	130	80	105	90	112	135	120	123	2.0
30	120	120	135	140	140	135	140	135	120	130	45	230	140	135	130	***	300	300	160	45	112	120	112	125	130	2.2
VD	120	115	112	115	116	118	123	142	198	223	236	233	225	229	237	248	243	239	227	122	106	114	115	114	175	
VV	2.2	2.3	2.4	2.6	2.7	2.7	2.6	1.9	1.7	2.0	2.4	2.8	3.5	2.7	3.5	3.7	2.9	2.4	1.5	1.1	2.3	2.2	2.0	1.9		1.3

TOTAL NUMBER OF OBSERVATIONS = 621

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

C8-TRACT
TRAILER AA23
JUNE 1973
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VEL
1	235	220	220	250	240	250	285	310	290	285	285	305	320	320	345	350	240	355	355	5	100	135	105	325	304	1.6
2	205	175	195	235	220	235	290	280	300	300	315	315	315	325	335	310	330	355	60	95	45	325	260	275	307	1.5
3	225	205	225	225	220	315	270	310	235	325	345	330	305	310	345	15	65	100	105	250	330	295	15	255	312	1.4
4	195	150	40	165	160	155	270	330	300	305	315	330	10	355	340	325	345	75	320	325	45	65	80	140	342	1.3
5	225	165	300	280	210	205	270	305	330	315	340	325	225	270	240	150	120	330	340	75	30	250	185	180	269	0.9
6	225	185	45	240	225	0	55	330	325	320	300	300	320	345	340	320	300	300	245	110	190	75	150	210	308	1.2
7	90	110	195	282	285	270	20	5	345	325	340	335	15	0	15	305	330	355	50	255	315	130	180	85	348	1.3
8	95	105	***	120	290	350	75	***	10	345	345	330	345	320	285	225	175	175	205	195	200	10	50	15	269	0.2
9	125	***	180	150	90	***	115	185	200	200	190	200	210	205	220	210	205	215	190	190	190	185	190	225	198	5.1
10	185	195	190	195	190	190	190	195	200	200	205	205	215	210	210	220	210	210	220	205	215	220	205	290	206	7.5
11	290	295	320	290	230	235	280	300	285	345	315	305	290	295	305	330	330	335	325	325	100	195	225	220	304	3.0
12	165	180	***	340	225	50	70	335	330	290	215	190	205	180	210	205	215	235	235	200	195	190	190	195	208	3.3
13	185	190	190	190	185	185	185	210	190	195	205	185	190	215	215	205	205	220	215	205	190	200	205	195	199	6.4
14	195	10	195	187	175	170	185	190	200	215	220	210	225	195	205	205	235	225	210	195	185	185	185	185	202	5.4
15	190	185	185	180	180	160	135	195	200	205	195	185	195	200	205	220	210	220	220	205	200	200	195	190	200	6.1
16	195	195	190	185	185	180	180	185	190	200	200	200	205	205	220	215	215	215	205	190	275	230	230	260	205	5.9
17	245	250	245	240	230	265	290	5	5	335	345	0	0	300	285	290	320	330	340	335	160	240	300	285	308	2.2
18	185	140	210	150	225	195	70	20	345	200	195	205	190	210	210	205	205	190	220	205	190	185	190	200	200	4.6
19	205	280	270	250	250	215	5	350	350	320	290	275	290	290	275	260	265	305	310	310	320	235	255	230	284	3.1
20	185	225	215	130	355	0	5	300	330	***	315	295	330	5	10	305	250	195	200	195	190	300	***	120	254	0.9
21	150	165	205	125	110	105	75	310	205	215	190	195	220	***	215	210	210	210	215	200	195	205	200	***	209	3.8
22	90	10	235	215	195	15	50	20	10	275	215	185	205	210	210	210	225	230	215	200	190	200	185	195	209	3.1
23	210	95	***	65	125	180	195	210	210	210	200	200	215	210	210	215	215	205	210	195	185	195	200	200	202	5.0
24	195	210	200	180	30	190	190	195	215	210	210	195	190	195	215	210	215	210	210	210	205	210	210	220	207	5.7
25	210	205	200	200	200	200	205	210	315	340	315	320	285	210	255	255	285	290	300	315	275	265	275	260	247	3.6
26	240	230	240	230	210	10	30	320	340	300	340	195	195	200	200	220	210	200	230	205	205	210	325	270	218	2.7
27	200	170	175	180	180	180	165	150	175	195	195	215	205	205	220	205	195	205	185	175	200	175	175	185	188	5.3
28	140	140	150	165	170	180	175	190	***	***	210	200	215	210	210	195	105	90	105	115	105	110	170	110	154	3.0
29	120	160	105	125	150	120	100	95	225	330	320	295	345	75	110	75	145	155	***	130	155	105	135	95	120	1.5
30	95	115	105	110	120	115	75	75	45	350	45	180	210	125	105	320	250	255	150	195	195	30	0	105	125	1.2
VD	192	187	200	190	185	183	182	209	228	234	234	220	228	223	234	235	225	224	225	204	196	194	194	210	215	
VV	2.2	1.8	2.0	1.9	2.2	2.0	1.3	1.7	1.7	2.4	2.7	3.5	3.6	3.5	3.8	4.1	3.8	3.3	3.0	2.2	2.2	2.1	2.2	1.9		2.4

TOTAL NUMBER OF OBSERVATIONS = 707

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
JUNE 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	265	230	255	255	255	250	280	290	305	290	290	320	320	320	330	355	345	340	345	355	80	110	105	30	318	1.7
2	***	180	195	285	250	240	280	295	290	315	305	310	295	295	330	305	325	5	50	85	30	15	275	285	311	1.6
3	245	220	232	235	230	260	245	300	270	300	320	310	300	315	335	5	65	95	95	255	330	280	10	265	304	1.4
4	250	170	10	150	155	155	***	315	320	310	305	320	350	350	310	315	335	85	305	305	50	60	80	125	332	1.2
5	125	290	25	0	75	205	255	315	330	320	330	320	225	265	275	***	150	320	0	85	25	270	190	180	292	0.9
6	220	***	40	***	***	120	90	315	325	340	285	310	320	330	330	315	305	295	265	110	170	95	125	215	310	1.3
7	140	90	110	205	280	290	185	340	340	345	315	330	355	355	5	320	325	345	15	255	350	100	155	115	346	1.6
8	110	170	120	310	350	80	55	55	5	325	350	325	325	350	330	190	155	165	190	190	195	180	5	40	192	0.3
9	105	160	185	190	110	325	120	190	205	200	210	215	210	210	205	205	210	220	195	195	190	185	190	230	202	4.6
10	190	200	200	200	200	190	195	195	205	215	205	205	215	215	210	220	215	215	215	210	220	218	215	295	210	7.5
11	295	300	325	320	300	265	285	330	315	345	310	300	305	295	305	330	330	325	325	330	45	120	265	245	311	3.0
12	215	210	***	285	290	80	75	335	310	295	225	200	220	180	205	210	220	230	230	215	190	190	190	185	212	3.3
13	190	200	190	180	180	190	180	185	185	190	195	195	195	215	200	205	210	225	225	215	190	190	200	200	196	6.7
14	195	290	195	190	185	180	190	190	200	210	210	195	225	195	205	205	255	215	210	200	195	190	185	190	203	5.6
15	195	195	195	200	205	190	160	180	200	205	205	205	210	200	210	215	215	220	210	210	205	205	205	200	205	6.4
16	205	200	195	190	190	195	190	190	195	215	205	200	210	210	235	220	235	215	215	200	285	260	255	290	212	6.0
17	265	270	270	285	265	285	275	20	355	310	330	15	340	290	295	275	320	335	340	330	120	30	310	285	311	2.1
18	155	165	180	135	90	200	100	45	285	185	200	200	190	210	205	215	215	210	215	205	200	190	195	210	202	4.5
19	205	290	275	260	240	205	0	325	20	295	285	285	265	280	280	260	265	305	310	320	315	270	315	0	284	2.8
20	150	190	245	250	355	35	95	295	310	345	270	285	345	345	0	330	255	190	200	195	200	160	120	115	237	0.7
21	150	170	180	155	110	120	165	210	205	205	210	205	215	230	210	205	215	205	215	200	200	200	200	225	200	4.1
22	110	***	240	225	180	110	90	315	10	285	210	190	200	220	215	210	230	230	220	210	195	195	190	135	211	3.5
23	200	105	240	50	195	185	195	212	205	200	195	190	195	210	195	210	200	210	215	205	195	205	205	205	201	4.7
24	195	215	195	205	110	200	190	195	220	205	205	195	195	200	210	210	215	215	215	210	205	205	205	220	206	6.1
25	210	205	205	200	205	205	210	215	275	340	310	310	300	215	230	260	285	300	300	315	295	280	290	270	246	3.7
26	265	255	265	255	230	300	50	300	330	315	355	200	205	190	210	215	215	200	230	205	200	165	100	190	221	2.2
27	170	170	170	180	180	175	165	155	170	185	210	225	220	210	215	215	200	200	195	180	170	175	175	185	188	5.5
28	150	150	150	165	175	180	180	185	***	***	210	225	210	255	205	200	100	95	110	120	120	125	160	160	159	3.1
29	165	180	135	125	165	135	115	100	225	260	300	300	190	95	115	95	135	155	***	140	160	115	140	120	145	1.9
30	105	120	110	110	120	120	90	75	50	10	45	165	215	135	120	345	260	245	150	190	200	190	345	120	139	1.4
VD	196	196	202	198	188	188	181	203	223	232	233	225	228	227	233	234	233	225	228	208	197	189	195	211	215	
VV	2.4	2.2	1.9	2.2	2.3	2.3	1.8	1.7	2.0	2.3	3.0	3.5	3.7	3.6	3.4	4.0	3.4	2.9	2.9	2.3	2.3	2.5	2.3	2.0		2.5

TOTAL NUMBER OF OBSERVATIONS = 709

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
60 METER LEVEL

C-A-TRACT
TRAILER AA23
JUNE 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	290	255	260	270	270	275	285	305	300	305	290	320	330	325	340	340	345	352	350	0	65	100	85	20	329	2.2
2	100	125	175	300	280	245	275	275	300	305	325	315	305	325	325	320	325	10	50	75	25	30	295	305	326	1.7
3	270	245	245	250	255	250	255	310	285	305	330	335	300	310	340	5	55	110	85	270	345	290	22	285	315	1.7
4	255	165	5	135	155	165	***	330	320	315	310	330	5	355	315	325	340	***	315	310	50	65	90	75	343	1.1
5	310	325	25	20	30	210	260	285	325	315	355	320	230	275	275	170	155	310	5	80	20	275	205	200	292	1.0
6	250	280	205	100	115	135	140	325	315	335	305	310	330	335	335	315	320	295	260	130	170	***	115	210	312	1.3
7	225	145	205	245	250	285	235	340	330	325	325	330	5	345	10	325	330	355	25	265	280	120	155	210	337	1.5
8	105	165	110	300	355	30	45	50	0	345	345	345	325	350	340	200	155	170	200	200	205	200	245	***	230	0.4
9	190	215	195	195	230	290	145	190	220	215	205	220	215	220	210	215	215	220	205	210	200	195	195	240	210	5.5
10	200	205	205	205	205	200	195	195	205	220	215	210	220	225	220	220	225	215	225	220	230	230	220	305	216	8.2
11	305	305	325	340	320	325	285	315	300	320	300	310	300	295	315	325	335	335	330	330	40	15	320	280	318	3.3
12	260	230	***	50	270	85	80	345	315	300	225	205	220	185	210	210	220	235	240	230	195	200	205	195	217	3.7
13	200	215	200	195	190	195	190	195	190	195	205	195	200	225	210	220	215	230	230	225	205	215	218	215	206	7.0
14	205	200	210	200	195	195	195	195	200	215	210	215	230	200	205	210	240	220	220	210	205	200	190	195	208	6.8
15	205	210	205	215	220	205	165	180	200	210	205	210	220	215	220	225	220	235	220	220	215	215	220	215	214	7.5
16	220	215	210	200	205	210	195	190	205	215	210	200	215	220	225	230	235	225	220	210	300	290	300	325	220	6.3
17	295	300	300	305	280	310	310	355	5	330	325	355	330	300	290	295	315	340	330	335	90	110	35	315	319	2.6
18	135	205	110	30	105	140	130	95	310	200	205	205	205	225	205	220	220	215	225	215	210	200	205	220	210	4.6
19	220	305	290	285	275	215	255	330	0	300	290	295	280	290	265	270	260	310	315	320	320	285	330	10	291	3.2
20	35	25	305	250	235	185	230	295	315	345	280	300	340	345	335	240	255	210	205	205	210	185	***	125	244	1.1
21	155	180	190	160	115	150	205	210	215	215	220	220	210	***	225	210	225	210	220	220	215	215	215	230	210	4.6
22	75	***	240	250	215	170	30	55	10	270	215	200	210	230	215	225	240	250	230	220	205	210	205	200	221	3.8
23	205	115	***	0	165	210	210	225	220	205	210	210	215	220	220	230	215	220	220	215	210	210	215	215	215	5.6
24	215	220	215	210	195	210	200	215	225	210	215	205	210	205	225	210	225	230	225	225	210	215	220	225	217	6.9
25	220	210	215	218	215	215	215	225	300	340	315	315	310	225	240	255	295	300	300	315	315	300	330	330	256	4.4
26	290	285	290	275	255	225	255	295	320	315	350	200	210	195	210	215	215	210	230	210	210	170	150	195	225	2.5
27	190	180	180	185	185	185	170	170	185	195	220	240	215	215	225	215	205	215	195	195	180	190	190	190	196	6.2
28	155	155	160	175	180	185	190	195	***	***	225	240	225	230	230	210	110	110	120	135	135	150	165	170	167	3.7
29	190	200	155	150	170	155	130	100	230	300	300	300	345	80	135	65	140	160	140	145	155	125	155	150	151	2.0
30	135	135	145	120	130	140	110	90	65	5	20	170	225	140	130	325	240	245	155	205	210	205	215	180	159	1.6
VD	213	208	212	208	199	199	197	210	232	237	240	239	237	238	238	240	236	234	233	221	211	206	207	223	224	
VV	2.6	2.2	2.5	2.2	2.7	2.8	2.3	1.9	1.9	2.5	3.1	3.4	4.0	3.7	3.9	4.2	3.8	3.6	3.1	2.9	2.6	3.2	3.1	2.5		2.8

TOTAL NUMBER OF OBSERVATIONS = 709

NOTE: **** = MISSING DATA

TEMPERATURE @ 60M *
DEGREE C

CR-TRACT
TRAILER 23
JUNE 1978
OCCIDENTAL OIL SHALE INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
4	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
6	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
7	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
8	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
9	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
10	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
11	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
12	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
13	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
14	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
15	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
16	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
17	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
18	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
19	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
20	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	20	22	23	23	24	23	23	20	18	17	17	16	( )	24
21	16	17	16	16	14	15	15	18	22	23	23	24	24	( )	( )	25	26	26	25	24	24	23	22	21	21	26
22	20	17	16	15	15	16	17	17	25	23	24	24	25	26	26	27	27	26	26	24	23	23	23	20	22	27
23	21	19	19	20	19	19	19	21	23	23	23	24	25	26	26	26	27	27	26	24	23	23	23	22	23	27
24	21	20	21	20	19	19	19	20	22	22	23	24	25	26	27	27	27	27	26	24	24	23	23	23	23	27
25	22	20	20	18	18	18	18	20	19	19	20	20	21	22	22	22	22	22	21	19	19	17	15	14	20	22
26	12	11	9	9	9	8	9	11	13	15	17	21	21	22	23	23	23	23	23	22	21	20	19	18	17	23
27	19	19	19	18	19	18	18	19	20	21	22	22	23	23	24	24	24	25	24	24	22	21	21	20	21	25
28	20	20	18	19	19	19	18	19	( )	( )	( )	20	21	22	22	22	18	17	17	16	16	16	15	14	18	22
29	15	15	14	14	14	14	14	15	18	19	19	18	16	16	13	15	13	13	14	14	14	13	13	13	15	19
30	13	13	13	12	13	13	14	15	17	20	21	18	19	19	21	22	22	22	22	21	21	19	19	19	19	22
AV	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )		
PK	22	20	21	20	19	19	19	21	25	23	24	24	25	26	27	27	27	27	26	24	24	23	23	23		27

* COMPUTED USING TEMP @ 10m AND DELTA T 60-10m

(05/15/79-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER 23
JUNE 1978
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
4	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
6	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
7	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
8	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
9	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
10	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
11	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
12	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
13	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
14	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
15	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
16	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
17	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
18	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
19	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
20	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	E	E	E	E	E	D	E	E	E	E	E	( )
21	E	E	E	E	E	E	E	E	E	D	D	D	D	( )	( )	D	D	D	D	E	E	E	F	F	E
22	E	F	F	F	F	F	F	D	F	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	E
23	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	E	E
24	E	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	E
25	D	D	D	D	D	D	D	D	D	B	C	D	D	D	D	D	D	D	D	E	F	F	F	F	D
26	F	E	E	E	F	E	E	D	D	D	D	D	D	C	D	D	D	D	E	E	E	F	F	F	E
27	F	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	D	D	E	D
28	E	E	F	E	E	D	E	D	( )	( )	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
29	F	F	F	F	F	F	F	E	D	D	D	E	E	D	E	F	E	E	E	D	E	E	E	F	E
30	F	E	F	F	F	F	F	E	D	D	D	E	E	E	D	D	D	D	E	F	E	F	F	F	E
AVE	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AB20
JULY 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
5	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
6	***	***	***	***	***	***	***	***	***	265	275	305	285	260	255	225	215	200	215	350	75	75	***	50	254	1.5
7	80	75	65	70	80	80	80	70	265	80	115	165	140	140	160	170	160	190	180	185	75	70	70	75	131	1.6
8	70	70	75	80	85	70	50	65	215	235	215	240	235	200	215	215	200	195	185	165	95	75	85	70	181	1.2
9	100	100	105	105	95	90	100	115	285	280	230	230	230	230	250	265	275	200	220	215	90	60	110	90	194	0.9
10	80	85	90	95	95	85	105	95	130	175	160	195	180	265	330	230	175	190	355	160	135	105	100	110	143	1.6
11	103	115	105	110	105	105	90	115	140	167	183	165	170	185	185	245	115	115	95	110	115	135	115	95	138	2.9
12	20	95	95	97	97	97	95	110	235	185	187	245	225	190	185	200	170	170	190	125	80	77	67	67	161	1.6
13	80	95	88	115	125	95	110	110	195	283	200	185	245	230	200	177	140	145	270	27	85	87	85	81	151	1.2
14	85	85	80	75	80	90	71	42	290	275	275	235	5	5	140	180	50	80	70	65	80	30	75	72	72	1.2
15	77	95	67	87	125	125	120	115	95	183	170	170	180	210	260	275	285	91	87	77	80	70	75	67	121	1.9
16	91	95	80	110	125	130	115	105	110	100	170	175	190	170	210	240	245	230	305	325	55	110	95	105	140	1.8
17	87	100	112	110	112	112	110	87	200	185	230	247	195	290	275	290	350	87	110	110	95	108	112	105	122	1.2
18	105	75	95	105	120	115	120	80	130	190	190	185	145	195	195	225	***	345	180	265	10	40	45	75	139	1.3
19	90	70	70	75	105	85	105	90	120	195	195	220	210	275	290	240	225	185	160	125	100	90	65	110	155	1.2
20	110	95	100	95	85	80	80	70	225	180	165	180	210	210	215	205	215	185	190	155	90	85	90	85	169	1.9
21	70	90	85	***	70	70	290	260	275	265	245	280	310	275	280	280	275	310	310	350	120	***	35	80	291	2.0
22	70	70	65	70	80	80	110	75	290	270	265	245	270	245	275	275	250	270	295	350	55	100	90	100	286	0.5
23	95	100	95	90	90	90	85	95	90	345	***	***	***	***	***	265	265	305	330	10	85	75	70	70	62	0.8
24	80	90	75	75	95	95	120	115	145	225	***	***	990	990	105	100	110	120	110	100	100	100	100	120	108	2.0
25	105	120	100	115	100	110	120	110	125	85	105	250	250	310	275	***	290	105	120	65	245	100	30	70	129	0.9
26	75	75	75	80	75	65	100	85	70	270	290	325	285	285	295	290	310	10	20	10	85	115	115	100	2	0.8
27	90	110	90	95	95	90	75	305	90	125	100	290	265	230	275	130	115	80	120	85	85	80	80	100	99	1.2
28	50	70	110	115	100	85	105	125	100	275	125	130	150	165	350	350	105	145	100	100	105	95	80	100	109	1.6
29	80	45	90	75	90	70	75	70	60	***	130	215	215	80	105	105	***	115	105	5	35	290	90	45	84	1.1
30	70	70	75	105	90	85	85	80	285	280	265	285	270	290	310	275	290	295	345	35	80	80	65	60	329	0.6
31	95	85	95	75	80	85	95	90	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
VD	86	89	89	95	100	97	101	96	165	209	202	219	221	232	238	236	227	157	133	66	92	91	86	87	136	
VV	2.0	2.0	2.0	2.1	2.2	2.2	2.1	1.6	0.9	1.6	2.1	2.5	2.6	2.5	2.1	2.5	1.2	1.2	0.6	0.9	1.6	2.0	1.9	2.1		0.9

TOTAL NUMBER OF OBSERVATIONS = 585

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
JULY 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VEL
1	60	75	105	105	***	***	90	90	60	210	195	185	210	180	210	230	210	225	240	215	205	200	10	170	195	2.4
2	195	180	290	10	45	75	60	170	180	175	195	210	215	200	205	200	210	210	225	205	195	200	190	185	200	4.1
3	180	195	195	190	185	45	75	160	180	200	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
5	***	***	***	***	***	***	***	295	40	***	340	220	165	195	215	220	200	210	220	205	200	275	5	230	214	2.7
6	***	205	215	150	165	140	65	25	5	355	330	330	225	230	225	260	205	205	220	200	220	0	345	290	233	1.7
7	240	210	65	25	285	90	75	0	40	65	210	200	185	180	200	190	200	215	210	210	190	185	190	185	196	3.2
8	190	190	270	195	195	190	100	***	215	220	220	200	220	210	215	220	215	200	200	200	190	200	***	220	207	5.0
9	285	175	***	185	270	***	120	75	220	205	220	200	210	210	245	240	210	205	205	200	120	50	175	10	209	3.2
10	120	160	215	110	185	200	70	165	190	185	185	200	205	250	315	210	190	200	240	195	180	165	125	120	186	3.7
11	140	125	115	105	100	90	80	175	185	185	185	175	190	200	200	250	170	150	140	120	135	15	135	160	170	3.6
12	225	125	85	195	165	315	20	210	205	220	215	225	215	210	210	210	195	220	190	180	190	20	100	120	204	3.1
13	180	80	350	130	165	260	115	50	55	215	200	200	225	245	230	175	190	205	240	225	210	205	195	280	204	2.1
14	235	120	355	255	110	175	0	355	310	340	0	10	25	55	50	330	75	60	40	80	135	140	190	270	48	1.0
15	55	125	145	145	115	100	80	115	180	190	190	210	200	220	240	285	355	130	135	125	120	140	135	105	166	2.4
16	90	90	85	95	95	80	65	75	200	190	190	200	210	200	195	225	220	215	250	345	320	150	160	135	186	2.8
17	125	110	120	110	120	100	90	170	220	215	225	215	225	260	275	235	330	255	110	110	135	150	160	155	185	2.3
18	175	160	90	90	105	90	120	180	195	205	195	210	180	205	215	220	210	220	235	265	190	135	195	125	195	3.1
19	180	215	310	110	130	165	145	105	175	180	210	215	215	280	290	250	215	185	195	205	180	170	90	75	193	3.5
20	130	95	110	105	55	85	155	205	200	195	205	200	235	235	215	215	225	225	210	205	205	195	265	240	209	4.5
21	190	320	285	260	280	280	310	300	320	350	290	330	0	315	295	315	325	325	335	15	80	255	275	260	307	3.4
22	230	230	250	225	215	195	35	335	315	355	310	325	290	305	265	350	315	305	335	350	260	170	165	280	296	1.7
23	145	275	110	200	265	225	305	25	335	210	225	185	230	215	195	255	320	45	20	90	175	185	260	140	226	1.0
24	325	175	230	310	160	80	70	290	195	235	220	250	305	5	125	130	150	155	160	145	205	125	160	160	173	1.4
25	155	185	65	75	100	110	135	195	195	290	285	305	240	310	0	275	310	170	165	290	225	215	260	345	237	1.4
26	130	265	245	125	305	345	115	290	325	315	345	340	340	325	0	345	10	10	25	50	95	120	255	355	360	1.8
27	350	195	195	150	115	175	125	155	160	205	215	265	315	290	210	115	90	175	95	235	200	205	280	190	194	1.5
28	190	210	125	135	195	290	85	260	230	320	260	170	175	230	345	20	40	10	190	250	185	190	255	340	230	1.0
29	230	150	155	155	185	285	285	120	120	265	355	270	215	145	120	100	20	75	155	170	335	10	110	245	161	0.8
30	195	345	345	225	315	245	310	295	300	355	280	310	315	320	350	20	320	0	0	75	165	185	160	340	329	1.3
31	85	105	120	110	110	130	120	65	155	255	235	265	230	315	220	185	265	290	275	345	155	330	35	150	222	0.9
VD	174	161	137	142	152	138	88	166	196	212	220	220	219	233	230	231	224	209	210	200	183	182	176	172	204	
VV	1.5	1.4	0.6	1.1	1.1	0.7	1.1	1.2	2.5	2.9	3.5	3.6	4.2	3.5	3.1	3.4	2.4	2.8	2.3	1.5	2.8	1.7	1.2	1.1		1.9

TOTAL NUMBER OF OBSERVATIONS = 691

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
JULY 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	265	50	105	120	85	90	105	95	80	210	200	185	205	180	210	220	215	210	230	220	200	202	170	195	195	2.4
2	195	195	195	195	140	150	110	170	180	185	205	210	210	210	210	195	215	215	230	215	195	200	165	180	200	4.6
3	165	190	190	190	190	95	95	155	185	190	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
5	***	***	***	***	***	***	***	290	70	***	325	215	185	205	195	210	205	200	230	215	205	255	355	275	217	3.0
6	***	215	240	200	180	155	95	45	345	335	335	270	235	230	205	240	215	205	225	205	260	0	5	325	243	1.3
7	260	220	150	***	***	110	95	30	45	70	190	205	185	185	195	190	205	215	205	215	190	187	190	190	194	3.6
8	190	190	220	195	200	195	225	30	215	225	215	200	205	215	220	215	205	215	200	200	195	195	230	240	207	4.9
9	285	175	160	175	85	100	115	90	215	205	225	200	210	230	245	245	215	205	210	200	180	70	170	345	210	3.0
10	200	165	230	70	140	195	110	160	195	185	190	205	200	270	290	200	200	200	225	200	180	165	125	135	187	3.6
11	145	135	115	115	105	110	90	175	190	190	185	185	185	205	200	255	175	150	135	130	135	60	140	160	169	3.6
12	275	75	***	195	170	255	20	205	195	205	200	230	225	225	225	200	220	215	205	190	190	***	95	105	208	3.5
13	110	120	285	195	155	250	165	65	***	215	200	215	230	250	240	195	195	195	230	220	230	190	130	345	214	2.2
14	***	75	95	75	120	***	115	0	280	345	0	0	330	160	225	315	250	60	40	40	115	120	150	135	55	0.6
15	125	135	145	145	120	110	90	115	185	185	205	190	195	210	245	265	290	145	135	130	125	145	140	120	165	3.2
16	110	115	110	115	140	120	85	120	195	195	175	205	195	195	190	210	230	210	230	310	280	150	150	135	182	3.2
17	125	120	115	120	135	120	110	175	205	215	215	215	200	250	245	245	310	135	110	120	140	140	160	155	171	2.9
18	175	180	120	120	110	115	160	185	190	190	195	215	205	205	205	205	205	215	230	260	185	140	225	160	195	3.6
19	145	180	280	130	125	155	140	105	175	180	205	230	205	250	285	240	205	195	190	195	180	165	205	90	191	3.7
20	125	210	120	105	210	145	105	190	180	195	190	195	215	225	220	225	215	210	200	200	195	190	225	235	199	4.9
21	190	295	290	260	275	275	295	290	285	345	255	275	340	295	295	300	315	305	310	350	45	230	270	270	296	3.3
22	250	245	275	235	235	215	70	350	315	5	340	310	335	20	295	5	285	295	315	325	335	120	180	340	308	1.4
23	200	220	155	155	220	245	275	355	325	215	220	170	215	215	180	225	260	10	5	15	95	155	195	195	222	0.8
24	275	135	140	150	170	130	80	130	200	230	185	170	275	320	100	135	110	155	160	155	225	135	115	175	157	1.7
25	155	145	90	95	140	115	170	180	190	245	145	225	240	315	330	255	235	160	165	185	215	200	255	65	196	2.0
26	120	200	325	180	65	85	185	240	320	230	325	340	340	325	335	330	330	350	20	45	90	120	125	120	352	1.3
27	50	90	105	145	135	120	150	155	165	225	110	250	310	170	125	115	90	145	90	230	205	210	280	190	161	1.5
28	185	200	140	145	225	220	95	125	230	280	135	165	185	220	340	25	15	240	215	255	160	160	275	20	212	1.4
29	235	165	145	160	130	295	280	120	85	215	10	270	175	135	105	70	15	70	150	155	190	5	100	240	140	1.0
30	130	120	185	130	340	120	170	285	290	320	280	295	320	315	340	0	335	340	10	60	135	160	150	145	346	0.5
31	85	105	120	105	105	135	120	90	190	220	240	265	240	165	220	200	225	280	290	340	130	335	40	130	205	1.2
VD	176	170	150	150	154	150	122	154	195	209	206	217	215	225	227	226	229	204	207	206	183	165	169	163	198	
VV	1.7	1.7	1.3	1.6	1.6	1.2	1.0	1.4	2.7	2.8	3.2	3.5	3.9	4.0	3.2	3.2	2.9	3.1	2.2	1.9	2.8	2.4	1.6	1.3		2.1

TOTAL NUMBER OF OBSERVATIONS = 688

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
60 METER LEVEL

CR-TRACT
TRAILER AA23
JULY 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	200	320	95	165	90	115	140	110	80	220	210	195	205	200	220	230	230	215	240	235	215	220	200	205	207	2.7
2	210	205	190	195	190	195	175	180	185	195	200	220	220	215	215	200	215	220	230	220	210	215	185	180	207	5.5
3	185	190	195	200	190	255	105	170	180	200	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
5	***	***	***	***	***	***	***	270	65	***	320	215	185	210	220	225	215	210	235	225	220	255	355	300	229	3.2
6	***	210	290	285	185	165	115	50	345	330	335	285	240	230	210	250	220	220	220	220	285	5	5	340	249	1.8
7	235	250	220	***	95	120	115	15	50	60	200	215	185	195	200	200	205	215	215	225	205	195	200	195	203	3.8
8	190	195	210	210	220	205	215	***	230	230	225	210	220	230	230	215	215	215	205	205	205	210	255	250	215	6.1
9	280	200	230	200	160	350	140	120	220	215	230	215	220	225	255	245	230	210	215	210	205	80	165	345	219	3.3
10	200	165	210	40	130	190	160	165	200	195	190	215	205	285	285	215	210	210	215	205	190	185	135	140	197	3.9
11	150	140	140	135	130	120	130	180	195	200	195	200	185	210	205	255	185	155	140	155	160	***	115	160	178	4.5
12	270	***	185	195	190	230	20	210	205	210	210	235	230	230	225	230	215	215	205	200	205	195	85	110	214	3.8
13	85	135	255	240	165	230	185	110	***	220	200	220	235	260	240	195	200	210	250	240	260	245	190	30	220	2.3
14	110	130	110	165	25	25	105	375	280	0	345	355	355	165	235	345	255	80	50	70	105	120	135	130	78	0.8
15	150	145	115	160	120	125	120	130	180	205	200	200	210	225	195	290	270	145	120	100	140	155	170	150	172	2.9
16	130	130	140	140	150	145	110	150	210	210	195	205	225	200	210	220	230	215	240	315	270	165	165	145	195	3.6
17	135	130	130	135	150	135	125	190	220	235	220	240	215	265	260	255	315	130	125	130	155	155	170	165	182	3.2
18	185	180	155	135	135	140	170	190	195	205	215	230	210	215	220	225	215	220	245	270	210	170	230	175	207	3.6
19	145	245	290	170	130	155	155	140	195	205	215	230	215	235	295	250	225	195	205	215	190	170	125	40	200	3.7
20	125	100	125	125	225	170	205	200	200	210	215	200	235	235	225	235	215	230	215	220	215	210	260	250	213	5.2
21	200	280	305	275	295	300	310	295	305	330	270	315	350	300	295	310	320	320	335	5	75	270	320	300	309	3.5
22	275	280	290	270	270	240	120	15	345	345	335	295	320	355	265	0	315	310	325	350	35	100	190	215	317	1.6
23	350	250	180	140	275	265	255	20	140	235	230	160	220	260	210	265	290	45	10	20	75	165	255	280	249	0.7
24	275	135	165	200	190	150	110	225	215	240	210	245	280	345	125	140	165	165	160	165	230	275	350	200	186	1.8
25	260	165	205	225	165	135	170	195	200	295	120	250	305	5	320	280	320	170	175	150	230	185	210	25	214	1.6
26	85	150	290	290	140	135	335	270	320	315	325	355	335	305	0	340	5	15	20	50	85	110	115	10	4	1.7
27	345	120	145	165	160	160	170	155	175	255	230	255	335	300	215	130	105	255	105	245	225	220	275	205	203	1.6
28	200	215	160	150	175	225	175	245	240	310	205	185	185	230	340	20	10	330	220	320	155	155	225	15	229	1.4
29	275	165	140	145	145	295	40	100	100	80	345	250	230	135	120	105	350	75	155	155	185	5	85	40	127	0.7
30	240	330	55	210	285	160	250	280	280	320	290	310	340	305	350	25	325	345	10	65	130	160	175	180	329	0.7
31	190	150	140	125	125	140	130	90	195	210	230	270	265	340	220	200	245	260	310	350	120	335	50	120	231	1.0
VD	189	178	167	181	171	173	157	175	203	222	221	227	228	239	232	238	236	213	216	219	195	187	174	174	210	
VV	1.9	1.8	1.4	1.8	1.7	1.2	1.1	1.6	2.8	2.9	3.5	3.9	3.9	3.8	3.6	3.3	3.3	2.8	2.5	1.8	3.1	2.6	1.5	1.3		2.2

TOTAL NUMBER OF OBSERVATIONS = 692

NOTE: **** = MISSING DATA

TEMPERATURE @ 60M *
DEGREE C

CB-TRACT
TRAILER 23
JULY 1978
OCCIDENTAL OIL SHALE INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	17	16	17	17	14	15	15	18	19	22	23	23	24	24	25	25	26	25	24	23	23	21	20	22	21	26
2	22	22	20	18	18	17	18	21	22	23	24	24	26	27	27	27	27	27	25	23	23	23	21	21	23	27
3	22	20	20	20	20	17	17	19	21	22	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	22
4	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	13	15	18	21	23	23	23	24	25	24	24	23	22	20	19	17	16	( )	25
6	14	15	15	12	12	12	12	14	15	18	19	21	22	23	22	22	23	23	22	20	19	17	16	16	18	23
7	13	14	14	12	12	11	12	15	19	22	23	24	24	25	26	26	28	27	26	25	24	23	22	23	20	28
8	22	22	19	20	20	18	19	20	22	23	24	24	25	25	26	26	26	26	25	25	25	24	20	20	23	26
9	19	18	18	18	18	18	19	20	20	22	22	24	25	27	27	26	26	27	25	23	21	20	20	19	22	27
10	18	18	19	17	17	17	19	20	22	22	23	26	25	24	24	26	25	25	24	23	19	16	16	16	21	26
11	15	14	15	15	15	16	16	18	19	20	20	20	21	23	24	22	17	21	22	19	18	18	18	18	19	24
12	18	17	17	17	17	18	17	20	22	22	22	24	25	25	25	27	26	26	25	25	24	21	21	20	22	27
13	20	19	19	18	19	19	18	19	23	25	25	26	27	28	28	29	29	28	29	26	26	25	25	21	24	29
14	20	20	20	19	19	19	18	19	22	25	27	28	29	29	30	30	30	29	29	28	26	25	24	24	25	30
15	24	23	23	22	22	21	21	23	25	25	25	26	27	28	27	27	24	22	20	20	19	19	18	18	23	28
16	17	17	17	17	18	18	19	21	22	23	24	23	25	25	26	27	27	26	24	20	18	18	18	16	21	27
17	17	16	16	16	16	16	16	18	21	22	24	24	25	25	26	26	20	18	17	17	17	17	16	15	19	26
18	15	15	14	14	14	13	15	17	19	20	21	22	23	24	24	26	25	25	24	22	21	21	20	20	20	26
19	19	18	17	17	17	17	18	20	22	24	24	25	26	26	24	25	26	26	25	24	23	21	20	20	22	26
20	21	19	17	18	19	19	21	22	24	24	24	26	27	29	27	27	28	28	27	26	25	25	24	24	24	28
21	23	21	21	17	15	13	12	13	14	16	18	20	21	23	22	23	23	22	22	20	18	17	15	13	18	23
22	12	11	10	9	9	9	9	12	14	17	19	21	21	23	24	24	24	24	24	23	22	21	20	19	18	24
23	17	16	16	17	16	15	15	17	20	22	23	24	25	25	25	26	26	27	26	25	24	23	21	21	21	27
24	19	18	19	19	18	17	19	20	22	24	24	25	27	27	26	26	25	25	25	25	24	23	23	24	23	27
25	21	21	20	20	19	18	19	21	22	24	25	26	27	28	29	29	29	27	27	25	25	24	23	21	24	29
26	20	21	20	20	19	19	19	20	22	24	25	25	26	27	28	28	28	28	27	27	25	24	22	22	24	28
27	20	20	21	21	19	19	21	22	24	26	27	28	29	29	29	29	29	29	28	28	26	24	23	24	25	29
28	23	23	21	22	21	21	21	22	23	22	22	23	25	25	25	26	26	25	24	23	22	22	22	18	23	26
29	19	17	16	17	17	15	15	16	18	21	24	24	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	24
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AV	19	18	18	17	17	17	17	19	21	22	23	24	25	26	26	26	26	25	25	23	22	21	20	20	22	
PK	24	23	23	22	22	21	21	23	25	26	27	28	29	29	30	30	30	29	29	28	26	25	24	24		30

* COMPUTED USING TEMP @10m AND DELTA T 60-10m

(05/15/79-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER 23
JULY 1978
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	E
2	F	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	E
3	F	E	E	E	D	F	F	D	D	D	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
4	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	D	D	D	D	D	C	D	D	D	D	D	D	E	E	E	E	E	( )
6	E	F	E	F	F	F	F	D	D	D	B	C	D	D	D	D	D	D	D	E	F	E	E	F	E
7	E	F	F	F	F	F	F	D	D	D	D	D	C	D	C	D	D	D	D	D	E	E	E	E	E
8	E	D	F	E	E	E	F	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E
9	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E
10	F	E	F	F	F	F	F	D	D	D	C	D	D	B	D	C	D	D	E	D	D	D	D	E	D
11	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E	E	E	E
12	F	F	F	F	E	F	F	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	E
13	F	F	F	F	F	F	F	E	D	B	D	D	D	D	D	C	C	D	D	F	F	F	F	F	E
14	F	F	F	F	F	F	F	E	D	D	C	D	C	D	C	D	C	D	D	E	F	E	F	F	E
15	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E
16	E	F	F	E	F	F	F	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	E
17	E	E	E	E	F	F	E	D	D	D	C	D	C	D	D	D	D	E	E	E	E	E	D	D	E
18	E	E	F	F	F	F	E	D	D	D	D	C	D	D	D	D	U	D	D	E	E	F	F	F	E
19	F	F	F	F	E	E	E	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	E	E	E
20	E	E	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	E	E
21	D	E	E	E	E	E	D	D	D	D	C	D	C	D	D	D	C	D	D	D	E	D	D	D	D
22	E	F	F	F	F	F	E	D	D	D	B	C	C	B	C	B	C	D	D	E	F	F	F	F	D
23	F	F	F	F	F	F	E	E	D	C	D	B	D	D	D	C	D	D	D	E	F	F	F	F	E
24	F	F	F	F	F	F	F	D	D	D	C	D	D	D	C	D	D	D	E	F	F	F	F	F	E
25	F	F	F	F	F	F	E	D	D	C	C	C	B	B	C	D	C	D	E	E	D	E	E	F	D
26	F	F	F	F	F	F	F	E	D	D	C	B	C	C	B	B	D	D	D	E	F	F	F	F	E
27	F	F	F	F	F	F	F	D	D	D	D	B	C	C	C	D	D	D	E	F	E	E	F	E	E
28	F	F	F	F	F	F	F	D	D	D	D	D	D	C	B	B	D	D	E	E	F	F	F	F	E
29	E	D	E	E	F	F	F	E	D	D	E	C	D	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AVE	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

C8-TRACT
TRAILER AB20
AUG 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	112	40	50	120	22	360	112	95	75	145	125	100	112	145	120	90	125	165	340	120	100	100	95	110	99	1.5
2	112	100	110	95	100	100	95	190	315	325	***	***	***	***	***	***	***	***	***	***	***	***	***	***	****	****
3	***	***	***	***	***	***	***	***	***	***	292	270	185	360	330	310	337	340	360	150	67	90	100	95	332	1.0
4	95	95	95	75	67	100	112	120	230	285	275	315	315	310	360	15	360	325	5	67	90	110	165	95	8	0.7
5	112	110	112	110	100	112	95	125	135	190	280	10	360	355	360	285	360	360	35	80	110	85	95	110	59	0.8
6	100	100	100	85	95	95	22	110	120	170	292	280	337	255	337	360	320	300	320	350	40	90	30	110	357	0.8
7	360	100	112	110	95	95	115	130	230	285	10	10	5	40	50	315	5	40	67	75	80	45	110	100	46	1.1
8	95	95	110	110	230	110	125	112	185	215	195	202	22	360	265	150	202	320	95	85	95	40	112	112	133	0.7
9	145	145	100	100	112	95	90	80	112	145	235	247	270	285	***	135	130	145	130	112	100	112	130	112	133	1.3
10	135	140	140	140	135	135	140	135	112	175	165	230	300	247	225	180	139	130	125	35	85	100	130	105	147	2.0
11	100	100	112	105	112	112	112	125	100	135	***	305	305	35	22	***	305	292	220	330	***	100	112	90	83	1.0
12	95	95	120	112	112	112	140	140	135	95	175	170	180	202	235	230	235	190	140	***	135	90	***	***	162	2.2
13	325	112	***	105	22	112	100	112	140	170	195	305	305	135	112	170	145	170	165	140	***	***	292	***	157	1.4
14	337	***	***	112	100	280	***	292	305	360	185	170	165	5	5	305	135	285	330	320	140	30	70	95	331	0.4
15	112	130	125	105	112	120	100	105	120	150	***	50	***	***	160	175	215	230	175	112	100	112	112	105	134	1.3
16	125	112	125	125	95	90	90	150	175	180	210	202	215	220	202	202	215	215	220	180	112	100	100	100	177	2.3
17	100	100	100	100	100	112	120	180	190	180	210	215	215	215	240	220	230	337	337	315	315	325	320	315	222	1.3
18	310	355	100	100	100	105	112	100	112	125	130	***	***	285	***	275	265	***	30	75	105	105	95	112	93	0.4
19	90	100	95	85	95	100	***	90	280	292	285	190	215	225	240	225	230	235	245	140	112	90	105	112	206	1.1
20	112	140	135	110	105	95	355	300	120	100	195	175	225	220	230	215	170	190	145	***	112	112	110	125	159	1.8
21	120	90	130	112	135	140	120	130	100	230	215	235	190	202	240	250	270	275	270	130	120	100	105	85	173	1.4
22	80	100	120	100	120	135	75	90	100	165	145	175	202	195	195	160	170	160	140	110	120	95	125	125	141	2.4
23	125	95	105	85	95	112	120	125	170	175	190	180	190	195	202	195	202	210	225	90	95	100	100	100	165	2.1
24	90	120	110	90	100	90	110	112	140	157	202	190	225	215	225	225	260	265	220	75	100	90	112	120	169	1.2
25	100	100	90	100	112	112	120	112	112	95	130	120	95	220	220	247	235	220	175	85	100	100	120	100	137	1.3
26	105	120	130	110	112	110	120	140	120	***	265	175	215	195	202	230	215	255	280	85	100	100	110	110	163	1.3
27	100	100	110	125	112	90	110	100	***	305	330	270	210	292	320	320	320	320	340	110	110	120	112	95	42	0.3
28	95	100	100	110	100	112	100	120	120	***	292	275	320	275	270	265	310	330	350	360	75	105	105	105	50	0.5
29	95	105	120	112	100	112	125	125	315	300	280	292	292	300	300	300	337	350	325	50	105	100	100	95	16	0.5
30	120	120	110	112	100	112	112	112	110	310	350	***	***	285	315	315	135	90	125	112	110	105	90	100	100	1.1
31	95	85	112	120	110	95	90	105	185	195	230	195	***	215	225	225	225	230	157	170	100	***	135	110	179	1.8
VD	101	107	113	109	106	109	109	122	141	179	214	206	226	240	246	230	225	246	204	91	101	94	107	104	147	
VV	1.3	1.6	1.9	1.9	1.7	1.6	1.6	1.5	1.2	1.0	1.7	1.6	1.6	1.8	1.6	1.9	1.4	1.1	0.2	0.9	1.4	1.4	1.3	1.5		0.9

TOTAL NUMBER OF OBSERVATIONS = 677

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	140	340	***	150	160	15	145	30	70	70	90	100	165	145	180	50	140	140	160	135	140	175	60	85	123	2.5
2	135	180	275	180	180	390	335	345	280	295	350	340	310	285	305	315	315	285	315	80	150	155	300	195	292	1.5
3	270	285	280	270	235	230	270	305	335	310	310	320	315	***	330	330	345	325	10	30	85	150	185	350	320	1.9
4	230	45	***	350	245	***	55	350	10	295	330	325	325	305	350	350	335	355	10	65	100	145	315	205	342	1.9
5	125	205	***	45	255	135	290	80	55	45	310	285	***	335	340	330	350	5	30	110	160	225	350	345	351	1.0
6	125	250	120	150	220	265	240	230	245	315	310	345	340	330	350	350	330	305	305	345	280	210	200	105	320	2.1
7	185	210	225	285	310	240	360	310	290	290	5	15	30	20	55	10	40	25	10	45	115	210	130	***	14	1.7
8	***	190	110	60	155	160	30	75	330	25	***	***	45	55	5	170	220	10	190	65	145	330	90	140	87	0.9
9	135	145	215	120	120	95	95	95	215	245	340	25	220	255	160	110	130	175	145	175	90	60	110	125	155	1.7
10	105	105	110	120	105	100	110	160	180	200	220	225	***	255	205	185	160	135	185	160	210	***	***	140	178	3.0
11	160	60	45	115	100	95	100	105	195	190	260	***	200	210	360	50	325	245	200	195	310	95	145	170	160	0.9
12	150	170	205	145	165	165	110	100	65	195	205	190	195	215	225	240	205	160	170	175	195	160	185	245	188	4.3
13	280	95	120	125	165	180	145	120	155	195	190	210	280	290	75	335	165	130	200	175	180	225	280	255	193	2.9
14	245	265	260	80	125	220	270	295	305	290	240	210	205	355	5	15	***	355	295	320	350	40	210	195	278	1.6
15	140	180	180	185	200	195	80	85	10	60	160	80	245	230	215	195	195	220	190	180	180	185	150	110	185	2.2
16	65	190	165	40	170	180	185	165	170	195	185	205	210	210	210	200	205	210	215	205	190	185	180	185	196	6.1
17	200	220	215	205	190	180	180	185	195	210	210	205	210	225	210	240	225	340	340	335	345	345	340	330	223	4.8
18	305	305	265	225	235	220	315	280	150	125	15	10	345	285	25	320	360	15	290	40	115	150	190	180	307	0.8
19	190	325	340	120	150	155	315	***	65	35	220	200	195	175	195	235	215	215	215	200	170	130	80	90	200	2.5
20	170	105	100	70	75	70	45	210	200	185	200	215	210	205	215	200	200	200	175	185	140	120	130	120	187	3.5
21	130	100	160	170	120	95	95	75	250	205	230	205	205	220	210	240	220	230	215	165	150	135	150	185	194	3.5
22	205	160	165	155	180	175	170	165	165	175	165	180	200	205	195	180	180	170	165	175	170	185	180	185	177	7.2
23	180	180	180	185	180	170	155	165	190	195	200	205	195	215	210	195	210	215	210	200	200	215	85	115	192	5.6
24	15	140	10	180	190	180	185	55	195	190	200	220	200	215	215	230	245	240	235	210	200	275	85	115	208	3.2
25	145	150	205	***	120	160	145	105	70	215	200	100	160	210	195	210	230	220	210	205	195	70	80	155	186	2.5
26	155	145	110	275	130	165	165	115	360	220	225	200	235	205	205	230	215	225	220	215	200	190	200	355	203	2.5
27	355	205	350	195	110	125	5	250	265	330	335	300	335	330	300	320	325	320	320	265	225	320	330	75	314	1.7
28	75	115	235	240	240	215	235	295	310	290	300	300	295	335	330	350	340	330	360	5	65	200	210	140	311	1.4
29	215	***	115	345	230	360	***	290	290	310	310	320	330	250	340	310	340	355	305	255	215	210	110	125	306	1.6
30	170	205	100	215	225	85	230	50	15	345	260	215	310	290	310	175	160	70	145	165	***	60	85	60	196	0.4
31	200	190	175	60	190	185	180	185	185	195	235	195	200	225	225	215	210	225	230	215	200	275	200	290	206	5.4
VD	172	185	178	161	173	166	164	162	196	207	221	218	227	239	236	235	225	234	220	184	176	177	176	160	203	
VV	1.5	1.1	1.2	1.4	1.9	2.0	1.5	1.4	1.7	2.4	2.9	2.7	2.9	3.6	2.5	2.6	2.6	1.8	1.7	1.9	2.1	1.5	1.1	1.1		1.7

TOTAL NUMBER OF OBSERVATIONS = 724

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	135	335	***	145	160	***	140	55	65	110	110	100	165	140	180	30	130	135	165	145	155	165	120	90	133	3.0
2	120	150	285	140	200	110	305	330	295	285	325	315	330	290	300	320	305	290	315	85	135	160	305	165	298	1.3
3	290	280	285	275	265	260	275	295	325	290	275	330	310	325	355	355	345	0	25	50	90	145	150	25	333	1.3
4	270	45	85	325	280	270	65	***	10	305	310	325	325	335	25	350	350	355	25	65	125	140	130	225	357	1.6
5	190	190	125	115	115	170	280	120	100	20	320	285	280	320	35	350	15	35	35	105	150	135	5	60	19	0.6
6	***	***	***	145	235	305	270	***	240	335	350	340	335	330	5	5	345	310	325	0	320	225	225	120	334	2.5
7	230	210	210	305	20	270	270	330	310	320	30	20	25	50	40	35	45	45	30	50	105	145	85	85	32	1.8
8	70	160	145	150	85	185	50	90	20	35	***	***	65	80	10	210	235	15	170	90	150	345	85	145	103	1.3
9	165	105	155	205	160	135	120	115	230	265	340	70	235	310	***	120	150	210	160	195	145	75	185	140	171	1.7
10	130	135	130	160	135	145	135	175	200	220	220	245	335	265	225	180	175	147	198	165	213	213	348	123	192	2.5
11	195	207	115	143	130	133	127	123	213	215	***	210	235	***	7	70	330	263	243	340	297	125	180	195	203	0.8
12	183	183	193	162	175	177	130	132	115	223	210	200	215	230	245	233	240	205	185	190	207	183	200	303	205	4.3
13	300	105	120	110	173	30	180	140	150	215	215	223	315	113	80	250	190	190	215	195	195	175	303	315	202	2.4
14	255	280	280	***	160	293	285	310	315	297	247	237	220	350	15	14	***	5	315	340	360	57	210	168	292	2.2
15	157	125	165	185	100	190	100	115	5	25	160	***	***	240	210	200	210	230	215	200	210	213	207	165	196	2.3
16	185	205	195	183	195	195	200	195	177	210	200	215	233	228	230	225	213	237	233	225	220	210	210	213	214	6.1
17	223	233	245	223	215	210	207	207	210	220	225	237	225	230	215	250	243	5	342	345	350	355	350	348	241	4.6
18	325	320	300	258	282	268	300	283	153	120	***	13	360	285	360	318	345	5	327	40	125	140	165	185	322	0.9
19	183	163	350	125	163	150	330	***	72	18	243	210	210	215	220	255	243	245	233	233	185	195	50	***	223	2.5
20	170	138	130	***	***	150	105	215	210	207	210	215	220	240	240	207	215	225	195	210	168	150	130	135	204	4.1
21	120	145	155	170	135	120	110	85	265	220	230	185	230	240	235	260	220	250	225	185	180	175	175	210	206	3.4
22	230	180	190	170	200	210	180	185	190	195	185	210	215	230	215	200	195	195	195	200	195	205	210	205	200	7.2
23	207	207	207	207	210	190	185	192	220	210	215	235	225	235	225	222	218	235	226	228	215	210	60	207	215	5.6
24	220	190	213	207	210	210	210	203	207	210	230	240	230	240	225	235	255	260	255	233	223	230	90	123	225	4.0
25	150	163	168	90	117	200	165	140	95	240	150	130	140	215	215	228	237	245	235	223	215	108	70	145	193	2.3
26	155	140	143	300	130	170	168	125	***	233	233	223	243	225	223	258	230	243	245	243	225	220	215	213	219	2.9
27	35	90	345	200	165	135	130	260	285	337	348	335	325	340	330	335	330	345	330	330	350	340	340	60	338	1.9
28	63	73	7	300	285	255	253	300	310	310	305	305	318	340	348	350	343	5	15	30	90	193	240	210	334	1.5
29	255	***	110	330	340	40	7	310	300	300	327	360	333	290	330	340	7	355	325	270	240	235	150	118	326	1.5
30	150	225	105	150	300	123	355	60	30	350	245	237	315	315	300	190	175	85	150	180	175	***	135	170	194	0.7
31	213	205	203	185	200	210	205	205	213	215	253	220	223	243	233	240	230	243	240	225	225	250	225	273	225	5.7
VD	189	192	193	188	188	194	184	188	216	228	229	236	248	255	249	250	240	263	243	208	195	186	200	178	220	
VV	1.5	1.2	1.4	1.7	1.7	2.1	1.6	1.7	1.7	2.4	2.9	2.9	2.9	3.3	2.5	2.4	2.7	1.7	1.8	1.6	2.1	2.0	1.1	1.1		1.8

TOTAL NUMBER OF OBSERVATIONS = 719

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
AUG 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	130	350	330	135	150	***	135	***	65	100	120	90	175	155	185	***	120	125	165	140	150	175	210	100	137	3.2
2	110	155	290	120	180	195	310	300	290	285	335	320	325	295	305	330	310	290	320	95	135	165	310	170	303	1.5
3	295	290	290	295	300	295	295	295	315	295	305	335	315	***	345	350	345	340	20	25	15	115	115	***	336	2.1
4	120	215	***	***	285	270	245	***	350	315	320	315	330	320	350	350	345	360	10	45	85	105	140	185	351	1.9
5	215	175	125	145	***	130	290	115	65	15	335	295	310	300	355	320	345	5	25	65	115	125	325	60	360	1.0
6	145	275	235	150	175	315	390	220	240	320	330	330	335	330	355	360	330	310	310	350	295	235	230	65	329	2.4
7	205	125	305	290	315	265	245	325	300	315	20	10	15	30	35	25	30	25	10	40	80	115	125	105	20	2.0
8	145	165	160	170	130	155	100	90	***	30	***	***	35	***	25	190	220	20	135	55	125	335	55	125	99	1.1
9	160	115	130	190	145	125	115	110	215	245	330	20	230	285	150	115	135	190	145	175	180	190	150	130	164	1.9
10	130	130	135	160	150	150	155	180	195	215	215	245	315	260	210	177	162	143	180	153	177	213	337	105	188	2.6
11	113	198	155	138	125	***	140	105	210	203	245	***	225	210	350	43	305	260	235	335	300	113	163	183	207	1.0
12	173	180	180	138	155	160	125	130	127	215	195	195	200	215	225	225	223	200	168	180	195	175	185	285	191	4.6
13	277	83	93	120	150	60	163	147	195	203	210	215	295	***	75	255	173	180	200	185	195	195	290	320	197	3.0
14	255	285	265	105	145	240	270	297	300	280	250	217	217	345	360	350	***	350	300	340	345	30	210	140	276	2.1
15	115	143	140	160	165	180	135	120	***	30	145	120	***	240	210	195	195	220	203	190	200	210	207	205	187	2.7
16	195	200	185	203	180	177	185	180	165	198	205	213	215	213	215	210	210	220	223	213	205	205	200	200	203	7.2
17	220	220	223	210	200	195	195	195	207	215	220	215	213	225	225	240	230	350	345	330	345	345	345	343	230	5.4
18	325	320	308	270	285	283	305	300	138	120	***	350	360	300	350	320	345	350	350	20	90	120	105	123	334	1.2
19	150	160	***	120	123	143	***	60	57	23	228	210	207	200	195	243	223	232	228	215	180	180	27	50	206	2.5
20	190	135	162	160	165	150	48	195	195	190	205	203	210	225	220	195	210	205	188	213	175	140	130	105	193	4.4
21	120	55	115	150	135	115	110	75	260	210	215	220	205	220	240	250	225	230	220	175	160	155	165	195	198	3.5
22	205	175	190	165	195	190	175	175	180	190	170	190	205	210	200	190	185	180	175	185	180	190	195	195	188	7.9
23	190	193	195	195	190	180	173	172	200	203	207	215	225	210	210	210	210	220	220	215	210	200	175	190	202	6.2
24	200	193	195	185	190	190	188	190	198	198	210	225	215	225	225	225	243	243	237	225	223	215	260	60	212	4.6
25	117	120	153	***	120	192	165	120	75	210	135	127	125	200	203	216	240	225	225	217	215	***	5	135	191	2.6
26	143	127	125	300	108	150	160	117	***	227	210	205	225	210	225	235	215	225	230	237	230	222	215	210	210	3.1
27	195	37	195	190	180	195	120	280	283	327	325	305	325	315	318	337	325	333	324	315	248	330	345	27	317	1.9
28	33	30	350	315	303	260	243	275	293	293	297	300	300	325	343	333	330	345	360	15	63	93	157	255	330	1.9
29	255	233	135	97	337	270	7	300	280	295	320	337	320	255	325	318	348	350	315	285	247	245	223	108	307	1.6
30	183	230	120	125	295	210	345	45	18	345	235	210	300	310	303	195	168	60	120	150	168	240	195	205	195	0.7
31	198	195	193	192	193	195	200	190	195	198	245	195	210	225	225	230	217	237	235	223	215	250	228	243	212	6.4
VD	181	187	189	174	178	185	176	178	205	215	222	225	239	242	242	239	231	251	235	201	191	185	201	174	211	
VV	1.7	1.3	1.7	2.1	2.2	2.7	2.0	1.9	2.1	2.5	2.9	2.9	2.9	3.8	2.5	2.9	2.8	1.8	1.7	1.5	2.2	2.1	1.3	1.1		2.0

TOTAL NUMBER OF OBSERVATIONS = 719

NOTE: **** = MISSING DATA

TEMPERATURE @ 60M *
DEGREE C

CB-TRACT
TRAILER 23
AUG 1978
OCCIDENTAL OIL SHALE INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	19	22	23	24	23	20	21	21	21	19	19	18	18	18	17	( )	24
2	17	17	14	16	15	15	15	15	16	19	21	24	25	27	27	26	27	27	26	25	24	24	23	21	21	27
3	17	13	12	11	10	10	10	11	13	15	18	21	22	22	24	24	23	24	23	22	20	18	19	18	17	24
4	17	17	16	15	13	12	12	14	17	19	21	22	22	23	24	24	24	24	24	23	21	19	19	19	19	24
5	18	18	18	18	16	15	15	17	20	23	24	24	25	26	26	27	27	27	27	25	25	22	22	22	22	27
6	21	20	17	19	19	17	16	18	22	25	26	27	28	28	27	27	27	27	25	24	23	22	20	20	23	23
7	19	18	17	16	16	15	14	16	18	20	22	23	24	24	25	26	26	26	25	25	23	21	21	20	21	26
8	20	20	19	19	17	19	18	19	21	23	25	25	26	27	26	26	24	25	25	25	23	22	22	21	22	27
9	21	20	18	18	17	17	17	19	22	23	24	25	25	25	26	25	25	24	23	23	21	21	20	20	22	26
10	20	19	19	20	19	17	19	20	20	23	24	26	25	26	26	25	25	24	24	22	23	22	20	20	22	26
11	21	21	21	21	20	20	20	19	22	23	25	26	27	27	24	25	26	26	25	24	22	21	19	19	23	27
12	18	18	19	19	19	19	18	19	21	23	23	24	24	27	25	25	26	24	21	20	19	19	18	18	21	27
13	16	13	13	12	12	12	12	14	17	18	19	19	15	14	17	20	20	19	20	19	15	13	10	9	15	20
14	9	8	8	8	9	10	10	10	9	8	8	7	9	10	11	12	12	12	11	6	5	5	5	5	9	12
15	4	5	5	5	4	4	5	6	7	11	12	14	16	18	18	20	20	20	19	18	16	16	15	14	12	20
16	15	16	16	14	14	16	16	17	18	19	20	22	23	23	24	25	25	24	23	22	21	21	21	20	20	25
17	21	19	19	19	18	17	17	19	19	21	22	22	23	24	25	24	24	20	15	13	10	9	8	7	18	25
18	6	5	5	3	4	3	3	2	2	4	6	9	10	11	12	13	14	14	15	14	12	11	10	10	8	15
19	10	10	10	9	10	9	9	10	14	17	19	20	21	21	22	24	23	22	21	20	20	17	17	17	16	24
20	17	16	15	15	16	15	16	18	16	18	20	21	22	23	24	23	23	22	20	19	19	18	17	17	19	24
21	17	17	18	17	16	14	15	17	20	21	22	22	23	24	24	25	24	24	24	20	19	18	18	18	20	25
22	18	17	17	17	16	15	14	14	15	15	16	17	20	20	18	19	19	20	19	18	18	18	18	17	17	20
23	17	17	16	16	16	16	16	17	19	21	22	22	23	24	24	24	24	24	23	22	21	20	19	19	20	24
24	19	19	18	19	19	18	17	18	20	21	23	23	23	24	25	25	25	25	24	22	22	20	19	20	21	25
25	19	19	19	18	18	18	19	19	19	21	20	21	23	24	24	24	25	24	22	21	21	20	19	19	21	25
26	19	17	17	17	17	16	17	18	20	22	23	23	24	24	25	25	24	24	23	22	21	21	21	19	21	25
27	18	18	17	15	17	15	16	15	17	20	21	23	23	23	23	24	24	24	24	22	20	18	17	17	20	24
28	16	16	15	14	11	11	10	11	13	15	17	19	20	21	22	22	23	22	21	20	19	18	16	15	17	23
29	15	14	13	13	12	12	13	13	14	17	19	21	22	23	24	23	23	23	22	21	19	18	18	17	18	24
30	16	16	15	14	13	13	14	15	18	20	21	23	24	24	24	24	23	22	22	21	20	20	20	18	19	24
31	20	19	19	19	19	19	18	19	21	21	22	22	23	24	25	25	25	24	23	21	22	21	21	20	21	25
AV	17	16	16	15	15	14	14	15	17	19	20	21	22	23	23	23	23	23	22	21	19	19	18	17	19	
PK	21	21	21	21	20	20	20	20	22	25	26	27	28	28	27	27	27	27	27	25	25	24	23	22		28

* COMPUTED USING TEMP @10m AND DELTA T 60-10m

(05/15/79-RPI)

SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER 23
AUG 1978
OCCIDENTAL OIL SHALE INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	0	0	0	0	0	0	11	31	39	46	70	84	15	12	13	14	11	2	11	0	0	0	0	0	359	84
2	0	0	0	0	0	3	13	30	45	58	67	78	84	82	75	63	34	9	3	0	0	0	0	0	644	34
3	0	0	0	0	0	3	13	27	48	60	72	79	81	73	69	57	42	25	9	0	0	0	0	0	663	81
4	0	0	0	0	0	3	14	30	47	61	72	80	81	77	69	56	41	24	8	0	0	0	0	0	663	91
5	0	0	0	0	0	4	15	31	47	61	72	79	80	76	68	55	39	22	7	0	0	0	0	0	656	80
6	0	0	0	0	0	4	13	29	45	59	71	77	81	20	24	43	28	15	5	0	0	0	0	0	514	81
7	0	0	0	0	0	3	14	29	45	60	71	79	80	75	68	56	39	21	7	0	0	0	0	0	647	80
8	0	0	0	0	0	1	13	31	50	60	73	84	22	82	13	33	25	21	2	0	0	0	0	0	510	34
9	0	0	0	0	0	2	13	28	44	58	72	84	23	56	75	42	8	15	9	0	0	0	0	0	529	84
10	0	0	0	0	0	4	15	23	47	58	75	54	13	80	17	59	8	4	2	0	0	0	0	0	464	90
11	0	0	0	0	0	1	15	23	37	43	75	73	84	16	33	41	27	6	1	0	0	0	0	0	475	84
12	0	0	0	0	0	2	9	8	40	59	49	61	59	62	34	40	31	20	1	0	0	0	0	0	475	62
13	0	0	0	0	0	2	11	26	45	41	42	59	18	58	37	40	37	22	6	0	0	0	0	0	444	59
14	0	0	0	0	0	3	11	20	11	7	13	16	39	27	16	10	44	16	1	0	0	0	0	0	234	44
15	0	0	0	0	0	6	16	31	46	61	72	78	80	76	67	53	38	21	6	0	0	0	0	0	651	80
16	0	0	0	0	0	3	14	29	46	60	71	77	79	74	65	53	37	19	5	0	0	0	0	0	632	79
17	0	0	0	0	0	3	14	29	46	60	71	77	79	75	66	53	37	3	2	0	0	0	0	0	615	79
18	0	0	0	0	0	0	1	3	11	54	53	58	58	76	66	52	37	19	4	0	0	0	0	0	492	76
19	0	0	0	0	0	3	14	29	46	57	48	82	83	57	49	49	28	14	4	0	0	0	0	0	563	93
20	0	0	0	0	0	1	10	16	16	35	53	67	46	47	35	31	19	6	1	0	0	0	0	0	383	67
21	0	0	0	0	0	1	10	(IM)	(IM)	(IM)	62	52	53	51	53	44	24	16	3	0	0	0	0	0	369	62
22	0	0	0	0	0	0	1	5	10	14	15	52	67	11	18	25	25	17	5	0	0	0	0	0	265	67
23	0	0	0	0	0	2	10	24	37	62	75	90	65	75	66	52	36	17	4	0	0	0	0	0	615	90
24	0	0	0	0	0	1	7	27	13	72	72	78	85	31	73	53	36	19	4	0	0	0	0	0	620	85
25	0	0	0	0	0	1	3	7	13	38	18	78	90	78	72	57	38	19	1	0	0	0	0	0	513	90
26	0	0	0	0	0	1	12	29	45	60	74	81	88	77	68	52	30	7	3	0	0	0	0	0	627	88
27	0	0	0	0	0	1	12	30	46	62	74	79	75	23	19	40	35	14	2	0	0	0	0	0	512	79
28	0	0	0	0	0	1	17	24	47	60	69	74	78	75	64	48	37	16	2	0	0	0	0	0	612	78
29	0	0	0	0	0	1	10	27	43	58	70	77	81	81	70	37	21	9	2	0	0	0	0	0	567	81
30	0	0	0	0	0	1	9	26	44	58	69	76	87	33	39	10	5	6	3	0	0	0	0	0	516	87
31	0	0	0	0	0	1	3	13	30	22	36	60	81	74	69	54	30	3	2	0	0	0	0	0	478	81
TL	0	0	0	0	0	62	343	715	1129	1564	1896	2223	2040	1915	1570	1372	927	446	125	0	0	0	0	0	16327	
PK	0	0	0	0	0	6	17	31	50	72	75	90	90	83	75	63	44	25	11	0	0	0	0	0		90

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER 23
AUG 1978
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	B	E	E	D	E	E	E	E	E	E	E	F	F	( )
2	E	F	F	F	F	F	F	E	D	D	C	B	C	D	D	C	D	D	E	E	F	E	E	F	E
3	E	E	E	E	E	E	E	D	D	D	A	B	B	B	C	B	C	D	D	E	E	F	F	F	D
4	F	F	F	F	F	F	E	D	D	D	B	B	B	B	C	C	D	C	E	E	F	F	F	F	E
5	F	F	F	F	F	F	F	E	D	D	B	B	B	B	B	B	C	D	E	F	E	F	F	F	E
6	F	F	F	F	F	F	F	E	D	D	B	B	B	C	D	D	D	D	D	D	E	E	E	F	E
7	E	F	F	F	F	F	E	D	D	D	B	C	D	B	B	B	B	C	D	E	F	F	F	F	D
8	F	F	F	F	F	F	F	E	D	D	C	B	C	B	D	D	D	D	E	E	E	E	F	E	E
9	E	E	E	E	E	F	E	D	D	D	C	B	D	C	B	D	D	D	D	D	F	F	F	F	D
10	F	F	F	F	F	F	E	D	D	D	D	D	D	E	D	D	D	D	E	E	E	F	F	F	E
11	F	F	F	F	F	F	F	D	D	D	D	B	B	B	D	D	C	D	D	D	E	E	E	E	D
12	E	E	F	E	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
13	E	E	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D
14	E	D	D	E	B	E	F	E	D	E	E	D	D	D	D	D	D	D	D	D	E	E	F	F	E
15	F	F	F	F	F	F	F	F	D	D	D	C	D	D	B	C	D	D	D	E	E	E	F	F	E
16	F	F	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
17	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D
18	E	E	E	E	F	E	E	E	D	D	D	C	C	C	B	B	D	D	D	E	E	E	F	F	D
19	F	F	F	F	F	F	F	E	D	D	C	D	D	D	D	D	D	D	D	E	E	E	F	F	E
20	F	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	E
21	F	F	F	F	F	F	F	E	D	C	C	D	D	D	D	D	D	D	E	D	D	E	E	D	E
22	D	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
23	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F	E
24	F	F	F	E	E	D	F	E	D	D	C	D	D	C	D	D	D	D	E	E	E	F	E	F	E
25	F	F	F	F	F	F	E	F	E	D	D	B	C	D	D	C	D	D	D	E	E	F	F	F	E
26	E	E	F	F	F	F	F	D	D	B	C	C	D	C	C	D	D	D	E	E	E	F	F	F	E
27	F	F	F	F	F	F	F	F	D	D	B	B	B	C	D	D	D	D	E	E	F	F	E	E	E
28	E	E	E	F	F	F	E	D	D	D	B	D	B	B	B	B	C	D	E	E	E	E	F	F	D
29	F	F	F	F	F	F	F	E	D	C	D	B	C	C	C	D	D	D	E	F	F	F	F	F	E
30	F	F	F	F	F	F	F	E	D	D	C	C	D	D	D	D	D	D	E	E	F	F	F	F	E
31	F	F	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E	E
AVE	F	F	F	F	E	E	E	E	D	D	C	C	C	C	C	D	D	D	D	E	E	E	F	F	E

II B-913

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AB20
SEPT 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	69	69	69	81	66	97	84	90	84	171	171	216	243	240	231	237	243	243	240	72	75	81	75	60	143	0.9
2	67	81	99	81	15	30	360	120	243	243	252	255	228	132	186	138	***	81	100	30	18	30	20	21	****	****
3	18	96	98	101	78	12	30	81	75	90	***	231	255	243	216	120	120	162	231	15	15	21	15	96	****	****
4	63	75	61	69	63	9	78	90	96	312	150	***	***	85	249	54	78	87	70	69	15	15	18	0	****	****
5	15	12	12	75	66	100	350	100	27	135	156	180	162	135	132	168	177	150	135	18	8	15	9	12	142	1.4
6	15	81	60	81	81	66	75	75	90	141	150	135	135	108	126	135	165	195	225	***	69	81	81	30	107	1.7
7	15	18	15	9	30	33	15	105	81	***	159	165	201	162	216	177	135	81	81	51	27	33	39	7	84	1.5
8	33	21	10	30	42	78	24	45	108	93	90	162	162	180	162	162	150	165	177	360	3	30	26	18	98	1.1
9	15	9	6	27	73	54	60	87	69	108	147	143	153	153	189	167	163	168	193	93	63	65	69	69	128	1.6
10	72	75	75	93	81	77	75	103	90	127	162	135	138	150	143	143	143	137	127	159	117	162	87	255	129	3.3
11	247	234	292	345	237	37	90	90	315	193	247	236	243	216	243	216	246	283	285	300	237	300	12	15	250	2.1
12	7	28	50	8	20	81	78	105	92	255	242	243	231	231	233	225	225	238	277	90	75	***	82	20	231	0.6
13	23	18	18	28	57	18	105	113	103	243	243	270	202	180	171	177	168	178	353	42	33	43	78	81	112	0.7
14	78	75	75	81	79	81	77	77	87	247	256	180	174	153	153	156	150	139	133	112	102	81	81	78	131	1.9
15	49	58	64	78	112	112	90	103	83	162	188	158	188	198	104	104	104	219	201	90	69	90	96	***	126	2.0
16	96	90	97	90	45	48	42	72	58	269	285	218	195	203	198	195	198	158	96	72	78	62	63	48	144	1.0
17	94	86	325	18	60	290	277	78	112	135	152	168	178	180	156	153	150	127	60	111	114	114	126	126	135	3.0
18	138	127	124	259	285	274	258	270	351	23	49	338	285	296	261	274	266	335	338	105	107	***	1	18	258	1.0
19	35	***	345	30	40	85	105	***	260	282	295	290	290	***	***	***	***	***	***	***	***	***	***	***	****	****
20	***	***	***	***	***	***	***	***	100	70	27	***	55	***	***	***	***	***	70	100	115	100	100	105	****	****
21	117	80	90	100	105	80	100	98	80	***	267	258	260	***	15	117	174	190	126	90	120	115	100	96	116	0.8
22	96	108	108	88	87	87	90	102	108	180	162	189	120	243	249	263	255	217	98	81	81	90	70	93	132	0.9
23	105	81	93	134	99	104	70	87	128	120	270	276	279	***	313	300	309	326	9	103	90	99	99	99	66	0.5
24	99	105	99	99	97	105	99	103	99	297	283	293	273	270	333	238	285	273	207	59	90	117	111	93	105	0.4
25	96	89	93	92	90	90	120	127	127	297	283	265	267	312	350	345	345	352	351	95	90	90	100	100	64	0.6
26	105	100	88	81	87	92	98	90	121	97	285	283	308	318	308	315	307	345	37	97	97	96	90	95	35	0.5
27	97	96	100	100	103	103	100	81	83	300	300	294	293	297	294	307	307	307	23	93	89	93	100	100	36	0.4
28	117	103	96	90	67	79	69	93	113	110	258	267	283	293	276	273	257	229	37	93	96	98	96	90	203	0.1
29	105	97	100	117	96	90	90	100	108	300	267	15	315	267	330	345	345	351	30	93	93	96	93	101	44	0.7
30	90	96	87	105	90	87	97	90	138	123	307	258	282	293	271	330	18	297	300	98	90	87	87	113	73	0.5
VD	89	84	75	72	70	74	78	94	102	160	204	204	217	214	212	195	185	194	81	91	87	86	83	81	124	
VV	1.3	1.4	1.5	1.2	1.2	1.3	1.4	1.8	1.6	0.8	1.3	1.7	2.0	2.4	1.7	1.7	1.4	0.9	0.5	1.4	1.5	1.4	1.6	1.4		0.8

TOTAL NUMBER OF OBSERVATIONS = 577

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1978
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	205	***	20	57	***	22	73	93	216	203	183	230	237	240	300	270	285	243	217	198	195	113	105	115	215	2.0
2	108	162	97	213	210	120	73	55	15	350	***	***	***	198	183	318	65	150	143	156	150	96	117	120	****	****
3	138	162	150	147	135	177	183	***	117	237	***	157	***	290	240	240	240	237	249	203	70	138	153	163	179	1.6
4	210	120	216	135	150	218	10	15	75	360	60	157	***	337	216	183	165	157	195	207	127	193	187	222	182	0.8
5	357	210	87	225	350	108	255	60	180	207	222	240	187	187	173	207	225	215	213	210	204	***	***	210	206	2.8
6	***	213	305	30	190	180	175	190	190	195	192	180	183	162	175	200	210	220	237	205	105	183	120	160	190	3.7
7	240	75	90	198	113	135	138	160	225	210	217	192	210	230	129	147	102	93	159	174	143	97	105	75	166	2.0
8	117	150	345	195	***	***	***	***	***	247	231	198	210	293	210	210	204	195	195	195	192	82	180	195	201	3.3
9	330	15	207	147	***	193	***	69	186	174	195	201	200	204	220	222	213	216	216	204	240	182	174	168	200	3.7
10	174	183	180	182	165	163	153	177	189	189	180	195	210	198	189	203	198	198	204	198	213	193	203	315	194	5.7
11	307	297	***	315	288	163	275	231	288	347	330	345	300	270	277	276	297	345	350	360	307	243	225	250	296	2.3
12	243	187	187	183	210	210	120	75	***	***	297	277	253	268	240	290	283	257	249	330	45	203	247	277	252	1.5
13	217	135	***	217	113	157	210	***	60	39	39	352	345	261	243	203	217	217	223	217	210	228	198	205	225	1.9
14	217	198	193	***	198	203	318	127	***	37	13	193	210	201	186	203	198	206	180	165	125	152	190	165	190	2.8
15	169	188	183	163	87	103	173	108	220	213	210	212	207	255	225	225	250	247	263	307	223	303	315	303	228	2.7
16	285	303	350	318	51	330	72	300	245	225	237	247	263	240	240	253	243	246	282	318	337	353	321	357	274	2.6
17	323	333	258	252	263	270	273	246	243	252	263	263	263	250	257	240	230	241	263	259	258	258	258	260	256	7.0
18	253	255	255	257	246	250	270	261	258	257	267	250	253	230	237	230	240	245	270	277	267	270	285	293	254	4.7
19	275	280	265	250	260	255	285	295	290	315	325	310	310	305	300	305	280	250	***	***	***	***	***	***	293	3.0
20	***	***	***	***	***	***	***	***	295	30	15	310	90	***	***	345	10	330	15	115	140	160	185	150	30	0.5
21	265	355	275	220	25	285	60	355	360	330	243	240	230	235	240	233	235	250	337	12	60	78	5	20	275	0.7
22	27	323	342	350	57	45	57	360	255	190	195	200	210	225	200	190	205	205	193	175	20	117	110	125	202	1.9
23	125	135	135	195	90	90	205	***	65	7	350	340	5	345	345	330	333	345	345	20	***	235	90	345	356	1.0
24	***	45	***	85	355	360	350	***	30	315	285	290	350	335	310	350	260	***	215	70	135	140	165	163	152	0.1
25	165	165	165	225	260	150	140	85	360	300	315	350	325	15	350	10	5	5	350	215	210	195	35	337	355	0.2
26	15	230	***	240	225	5	***	90	45	360	15	330	5	350	20	345	7	357	15	100	165	180	210	80	360	1.1
27	250	360	175	150	320	20	315	355	320	315	350	345	315	320	350	325	340	345	270	203	200	35	90	140	325	0.7
28	180	***	123	140	130	105	100	60	195	215	215	285	295	290	250	235	230	220	207	203	213	***	230	228	231	2.1
29	***	***	150	110	225	230	230	300	300	300	320	345	325	20	360	345	355	25	25	50	200	217	345	225	347	1.1
30	***	210	285	315	215	***	360	***	20	20	15	330	330	345	340	350	300	305	210	195	175	195	213	210	311	0.9
VD	225	222	213	213	206	182	188	178	212	218	227	239	244	250	237	237	239	239	234	212	203	218	215	223	228	
VV	1.4	1.0	1.0	1.0	0.6	1.0	0.6	0.5	1.5	1.9	1.9	2.4	2.9	2.9	2.8	2.9	2.6	2.1	1.7	1.5	1.2	0.8	1.2	1.1		1.5

TOTAL NUMBER OF OBSERVATIONS = 640

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	223	203	***	***	198	217	90	100	231	223	225	236	255	275	315	295	295	263	235	210	210	120	123	120	234	2.2
2	130	153	127	195	255	100	190	113	23	7	30	210	15	233	195	337	78	155	153	168	172	137	163	147	155	1.4
3	143	150	162	150	173	195	193	186	165	233	***	135	***	293	217	258	255	247	270	222	63	97	163	173	189	1.6
4	210	173	195	157	137	157	323	360	105	15	60	162	***	353	240	213	180	195	225	230	95	100	108	243	192	0.8
5	320	235	135	157	150	135	258	100	193	225	235	243	205	229	203	235	235	237	240	230	230	225	125	***	223	2.7
6	200	215	310	215	213	198	198	200	210	215	217	217	230	195	207	217	237	255	247	237	145	213	135	160	212	3.7
7	233	120	108	210	187	165	150	170	243	230	222	225	228	243	135	174	120	108	186	192	157	138	135	100	184	2.1
8	168	195	350	210	***	***	***	***	***	237	230	220	220	231	225	228	210	225	223	216	215	***	192	162	220	3.8
9	17	145	178	192	90	213	195	93	198	197	213	225	223	230	227	227	234	228	235	217	222	207	205	190	215	3.3
10	195	213	190	198	190	183	183	193	203	210	198	203	228	228	215	210	213	216	223	213	237	226	237	321	213	5.8
11	315	300	345	326	300	180	307	337	300	350	***	330	309	289	278	270	309	350	350	7	310	263	263	255	306	2.4
12	290	307	180	183	200	285	90	80	***	327	307	293	265	277	270	309	307	250	258	330	43	45	270	280	278	1.3
13	247	223	45	103	223	200	210	110	187	45	63	7	360	270	245	225	255	247	247	237	240	243	237	200	246	1.8
14	237	165	187	300	***	***	297	195	95	80	45	***	225	230	210	220	225	220	195	190	157	150	190	187	207	3.0
15	185	203	195	180	123	123	190	177	228	225	225	228	228	230	240	234	230	243	252	225	213	215	213	78	218	4.2
16	270	300	213	180	252	188	***	120	47	345	347	237	230	225	225	225	230	222	213	222	225	225	210	217	227	3.3
17	230	240	330	40	123	***	320	255	230	225	225	235	240	233	220	217	203	195	190	195	200	200	195	198	213	5.5
18	203	203	198	205	340	337	327	324	***	97	237	330	345	360	337	345	333	360	355	360	***	313	300	288	272	1.6
19	300	295	285	273	276	278	294	303	302	320	340	330	315	330	320	310	315	290	270	245	***	354	***	***	309	2.5
20	***	***	325	305	183	***	267	310	315	5	30	335	110	***	***	340	25	345	20	107	140	147	178	178	42	0.3
21	***	355	310	220	27	10	35	5	20	355	320	325	360	***	***	203	216	225	222	225	210	207	***	198	235	1.0
22	258	60	123	240	105	135	350	60	225	213	213	225	237	243	240	225	220	235	230	210	215	***	120	135	222	2.3
23	150	150	163	205	185	120	***	***	80	45	5	5	5	15	360	345	360	5	5	45	***	***	225	360	13	1.0
24	***	60	15	345	345	***	10	***	40	325	300	315	350	350	330	10	280	160	240	70	145	155	180	185	170	0.4
25	195	185	185	***	270	150	165	135	25	325	330	15	345	30	15	25	25	20	10	20	250	245	10	5	21	0.4
26	10	100	180	220	350	330	140	305	85	360	15	347	20	35	20	360	20	15	35	95	165	150	150	30	20	1.1
27	***	43	250	207	350	30	40	345	330	350	345	360	335	345	330	5	360	5	10	345	215	235	125	153	349	0.9
28	200	210	165	155	155	125	125	135	230	240	245	300	310	300	270	255	270	250	235	230	245	75	295	277	252	1.9
29	105	160	180	350	290	260	315	300	320	310	345	20	5	20	20	5	30	45	45	75	110	273	295	290	9	1.0
30	200	235	325	105	255	***	60	***	50	30	40	350	350	355	330	20	90	315	255	180	185	190	237	245	343	0.5
VD	211	206	192	202	216	192	207	185	217	232	237	246	258	264	249	248	247	243	232	215	204	200	194	195	227	
VV	1.7	1.4	1.2	1.3	0.6	1.1	0.6	0.5	1.4	1.5	1.5	2.2	2.4	2.7	2.8	2.5	1.9	1.9	2.2	2.2	2.4	1.6	1.6	1.5		1.6

TOTAL NUMBER OF OBSERVATIONS = 672

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGES (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
SEPT 1978
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																								VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	217	207	195	200	200	217	200	186	223	210	213	225	230	270	300	283	285	250	223	213	210	117	135	130	225	2.8
2	120	140	82	145	357	45	100	100	10	360	15	203	***	213	160	315	57	135	132	157	157	137	150	140	140	1.6
3	132	127	147	137	165	177	177	180	150	230	235	80	***	295	225	235	255	240	280	232	222	100	140	150	185	1.4
4	165	143	173	180	140	108	258	350	80	350	48	165	140	345	203	195	165	190	216	233	***	***	150	210	181	0.8
5	193	30	90	165	180	160	258	80	133	210	213	225	193	210	173	213	216	223	227	225	227	225	216	203	208	2.7
6	187	180	190	200	198	190	183	193	195	198	197	193	213	170	180	216	233	230	243	236	207	219	120	140	199	4.0
7	203	165	200	200	190	180	143	180	225	225	210	213	210	225	183	165	129	127	153	174	150	136	155	125	182	2.8
8	170	190	315	217	105	***	***	***	***	235	210	203	203	203	205	210	195	198	205	198	210	188	176	162	202	3.7
9	***	162	162	195	210	193	189	90	195	180	207	207	203	225	220	227	217	213	225	213	205	210	207	180	205	3.9
10	175	180	180	180	175	170	170	180	207	195	186	190	207	195	207	200	205	203	213	201	230	205	217	310	198	5.6
11	307	297	297	300	300	177	246	247	297	360	330	335	270	272	275	277	300	345	352	360	308	267	275	260	296	2.4
12	293	305	165	163	180	245	***	75	180	315	293	270	263	255	258	305	293	255	245	335	23	105	270	288	268	1.4
13	258	245	215	177	217	213	203	177	203	53	30	340	330	255	333	204	210	216	250	216	255	252	247	237	243	1.7
14	216	189	186	237	360	213	295	200	60	97	22	180	207	203	195	203	203	205	192	180	150	143	178	175	192	3.0
15	165	184	178	170	125	150	170	173	216	210	203	208	210	220	230	216	203	228	225	230	205	210	210	30	204	4.7
16	250	283	207	183	237	190	12	143	43	330	318	230	225	205	216	222	217	207	203	210	215	215	210	212	218	3.5
17	203	232	303	27	105	225	303	240	210	213	220	217	213	205	198	198	190	185	175	186	177	183	183	183	197	6.2
18	190	192	180	180	325	318	310	***	310	72	225	324	342	345	330	337	330	345	345	350	72	295	300	303	268	1.5
19	197	197	285	280	277	280	285	297	295	300	325	313	310	315	309	300	309	276	276	276	247	330	335	335	297	2.3
20	295	290	290	280	280	280	290	300	300	295	335	315	315	310	305	310	305	280	***	***	***	***	***	***	303	1.4
21	***	***	***	***	***	***	***	315	315	355	15	315	95	***	***	355	355	335	360	75	115	120	130	140	31	1.2
22	170	340	275	195	230	335	340	310	30	5	203	210	240	225	195	210	217	210	213	210	210	193	105	120	217	1.9
23	138	148	153	198	198	150	***	***	60	60	345	350	350	360	15	350	330	360	358	30	***	345	253	270	360	1.1
24	237	***	***	***	300	250	235	260	343	300	300	300	345	345	310	355	273	163	240	60	140	140	165	168	185	0.5
25	180	168	165	168	180	147	140	153	360	300	310	330	348	7	350	10	10	5	360	15	255	230	***	***	8	0.4
26	***	***	150	235	345	255	113	225	***	335	360	330	5	335	7	355	360	360	18	60	120	135	130	***	2	1.3
27	***	***	***	***	315	250	125	280	310	348	337	330	300	335	5	340	345	348	343	230	210	210	90	130	311	0.9
28	200	207	200	150	133	147	147	200	215	225	225	273	300	277	260	250	247	230	225	225	230	27	325	292	241	2.5
29	260	253	333	350	315	290	315	325	297	285	340	7	345	5	5	350	10	30	35	50	115	285	300	285	357	1.3
30	***	240	50	120	270	255	210	***	***	18	25	345	320	345	330	20	***	305	275	183	175	165	235	245	325	0.8
VD	195	194	186	188	226	201	201	198	210	222	226	230	239	246	242	241	240	231	225	207	198	193	193	191	216	
VV	2.1	1.8	1.4	1.5	0.7	1.2	1.0	0.8	1.2	1.4	1.8	2.3	2.5	2.6	2.1	2.4	2.0	1.9	2.1	2.4	2.8	1.8	1.7	1.5		1.7

TOTAL NUMBER OF OBSERVATIONS = 674

NOTE: **** = MISSING DATA

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER 23
SEPT 1978
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	F	F	E	D	D	D	D	C	D	C	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	D	E	D	D	E	E	E	( )
3	F	F	E	E	F	F	F	E	D	D	D	D	D	C	D	D	D	D	E	E	F	E	F	E	E
4	F	F	E	F	F	F	F	E	D	D	D	D	D	D	B	D	C	D	E	F	F	F	F	F	E
5	F	F	F	F	F	F	F	E	E	D	D	C	D	C	C	C	D	D	E	E	F	F	F	F	E
6	F	F	F	F	F	D	D	D	D	D	D	C	B	D	D	D	D	D	E	E	E	B	B	B	D
7	F	F	F	F	E	E	F	E	D	D	D	C	D	D	E	E	E	E	E	E	E	F	F	F	E
8	F	E	F	E	D	D	( )	( )	( )	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F	E
9	F	F	F	F	F	F	E	E	D	D	D	D	D	D	C	D	D	D	E	E	F	F	E	D	E
10	E	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D
11	D	D	D	E	D	E	E	D	D	D	D	D	D	D	D	E	D	D	D	D	E	E	E	E	D
12	E	E	F	E	F	F	E	E	D	D	D	D	D	D	C	D	D	D	D	E	E	E	F	F	E
13	F	F	F	F	F	F	F	F	F	D	D	C	D	D	D	D	C	D	D	D	E	F	F	F	E
14	F	F	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
15	D	E	E	E	F	F	F	F	D	D	( )	( )	D	D	D	D	C	D	D	E	E	D	E	F	E
16	E	E	F	F	F	F	F	E	D	C	D	D	D	D	D	D	D	D	E	E	D	E	F	E	E
17	F	F	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
18	D	D	D	D	D	D	E	E	E	E	E	E	D	D	D	D	D	D	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	B	B	D	E	E	E	E	E	E	D
20	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E	F	F	E
21	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	F	E	F	F	F	F	E
22	F	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	D	D	E	F	F	E	F	F	E
23	F	F	F	F	F	F	F	( )	E	D	D	D	D	D	B	D	D	E	E	E	F	F	F	F	E
24	F	F	( )	F	F	F	F	F	E	E	E	D	D	D	D	D	D	E	E	E	E	E	E	E	E
25	E	E	E	F	F	F	F	E	D	D	D	D	B	B	C	B	D	E	E	E	F	F	( )	F	E
26	F	F	F	F	F	F	F	F	E	D	D	B	B	B	B	D	D	E	E	E	E	E	F	F	E
27	F	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	D	E	F	E	F	F	F	F	E
28	F	F	F	F	F	F	F	F	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	E
29	F	F	F	F	F	F	F	E	E	D	D	D	B	B	D	D	D	E	E	E	F	F	F	F	E
30	F	F	F	F	F	F	F	F	E	D	D	D	D	B	C	D	D	E	E	F	F	F	F	F	E
AVE	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	34	8	536	247	25	168	194	24	25	30	28	27	32	56	27	15	0	
GT 130. :	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0 :	4
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0 :	1
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0 :	2
30. - 40. :	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0 :	5
20. - 30. :	0	0	0	1	4	9	8	3	5	3	3	5	2	2	3	0	0 :	48
10. - 20. :	6	0	0	3	1	4	5	8	12	9	6	1	1	1	3	3	0 :	63
LT 10. :	37	14	12	14	23	26	42	55	69	91	66	32	20	15	29	27	0 :	572
TOTAL :	44	14	13	19	28	41	57	66	86	104	75	38	24	21	35	30	0	695
MEAN CONC.	4	2	44	18	5	11	9	4	4	3	3	4	4	10	4	2	0	6

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	12	6	176	97	20	140	175	20	20	13	12	3	0	22	11	12	0	
GT 130. :	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0 :	3
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	1	1	3	3	1	1	0	0	0	0	1	0	0	0 :	11
10. - 20. :	1	0	0	1	2	7	5	3	5	3	1	0	0	1	1	2	0 :	32
LT 10. :	43	14	12	16	25	29	48	62	80	101	74	38	24	19	34	28	0 :	647
TOTAL :	44	14	13	19	28	41	57	66	86	104	75	38	24	21	35	30	0	695
MEAN CONC.	0	1	14	7	2	9	5	1	1	0	0	0	0	1	0	1	0	2

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	22	1	235	97	16	18	21	15	16	19	18	17	20	37	18	5	0	
GT 130. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0 :	1
20. - 30. :	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0 :	4
10. - 20. :	0	0	0	0	1	1	2	2	3	5	3	6	3	3	3	0	0 :	32
LT 10. :	43	14	12	18	27	40	54	64	83	99	72	32	20	16	32	30	0 :	656
TOTAL :	44	14	13	19	28	41	57	66	86	104	75	38	24	21	35	30	0	695
MEAN CONC.	2	0	19	7	1	1	2	2	2	1	1	2	3	5	2	0	0	2

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	88	87	81	87	84	85	86	81	89	95	91	95	92	82	94	86	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	5	1	1	1	1	1	1	1	3	5	9	4	2	1	4	2	0 :	42
60. - 80. :	20	5	1	8	8	12	20	17	35	42	23	11	6	6	13	15	0 :	242
40. - 60. :	17	7	8	8	15	25	34	45	41	49	29	10	5	4	15	12	0 :	324
20. - 40. :	2	1	3	2	3	5	0	2	7	7	9	10	7	7	3	2	0 :	70
LT 20. :	0	0	0	1	1	0	2	2	1	1	6	3	4	5	1	0	0 :	27
TOTAL :	44	14	13	20	28	43	57	67	87	104	76	38	24	23	36	31	0	705
MEAN CONC.	62	58	52	55	52	55	55	53	58	56	54	50	44	43	58	61	0	55

0 = NO OBSERVATIONS

II B-922

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	2912	3030	3237	3274	3274	3213	3214	3202	3274	3094	3234	3195	3246	3179	2987	3274	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	1	2	1	2	1	1	1	0	3	0	2	0	0	2	0 :	16
3000. -3200. :	0	1	2	2	3	4	5	7	7	6	9	5	0	1	0	0	0 :	52
2800. -3000. :	2	0	0	0	3	0	2	3	5	7	4	0	0	0	5	2	0 :	33
2600. -2800. :	2	0	0	0	0	0	1	1	1	0	0	0	1	1	2	2	0 :	11
2400. -2600. :	1	0	0	0	1	0	1	0	2	2	1	0	0	0	0	1	0 :	9
2200. -2400. :	2	1	0	0	0	1	0	0	0	1	1	1	0	0	1	1	0 :	9
2000. -2200. :	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0 :	5
1800. -2000. :	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0 :	3
1600. -1800. :	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0 :	4
LT 1600. :	33	8	8	14	16	35	44	52	66	74	55	29	17	21	26	21	0 :	519
TOTAL :	41	11	11	18	25	42	56	65	83	93	73	35	20	23	35	30	0	661
MEAN CONC.	1352	1445	1603	1555	1700	1354	1401	1420	1414	1380	1534	1382	1362	1219	1497	1555	0	1433

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1157	1043	1034	1005	1051	1053	1018	1026	1025	1135	1089	1051	1079	1013	1082	1072	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	23	7	2	2	3	6	8	8	8	13	9	4	6	6	10	11	0 :	126
800. -1000. :	20	6	10	17	23	36	48	59	77	87	65	34	17	17	25	19	0 :	560
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	43	13	12	19	26	42	56	67	85	100	74	38	23	23	35	30	0	686
MEAN CONC.	1003	996	970	980	973	974	973	972	974	976	980	976	988	978	984	992	0	979

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1913	2021	2289	2281	2291	2256	2195	2267	2262	2132	2293	2247	2277	2166	1996	2275	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	1	3	2	2	0	3	2	0	4	3	2	0	0	2	0 :	24
2000. -2200. :	0	1	2	1	4	4	6	5	7	8	9	2	0	1	0	0	0 :	50
1800. -2000. :	3	0	0	0	1	0	2	3	4	5	3	0	0	1	5	3	0 :	30
1600. -1800. :	1	0	0	0	0	0	1	1	2	0	0	0	1	0	2	2	0 :	10
1400. -1600. :	2	0	0	0	1	0	1	0	1	2	1	0	0	0	1	1	0 :	10
1200. -1400. :	1	1	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0 :	6
1000. -1200. :	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0 :	5
800. -1000. :	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0 :	3
600. - 800. :	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0 :	4
LT 600. :	33	8	8	14	16	35	44	52	66	74	55	29	17	21	26	21	0 :	519
TOTAL :	41	11	11	18	25	42	56	65	83	93	73	35	20	23	35	30	0	661
MEAN CONC.	350	443	631	573	728	379	427	448	440	406	555	407	380	240	513	562	0	455

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	6	9	0	7	7	4	7	9	7	8	7	7	8	0	5	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	42	14	13	18	26	40	56	62	82	102	71	32	21	18	35	29	0 :	661
TOTAL :	42	14	13	18	26	40	56	62	82	102	71	32	21	18	35	29	0	661
MEAN CONC.	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/76 TO 9 /30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	4	3	4	4	1	4	4	6	4	3	4	4	0	2	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	37	12	12	15	25	37	50	59	71	95	69	30	21	18	34	25	0 :	610
TOTAL :	37	12	12	15	25	37	50	59	71	95	69	30	21	18	34	25	0	610
MEAN CONC.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITPOGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	73	106	10	100	84	93	87	51	128	128	75	78	90	79	89	80	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0 :	2
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	2
90. - 100. :	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0 :	2
80. - 90. :	0	0	0	1	1	4	1	0	1	0	0	0	0	0	2	2	0 :	12
70. - 80. :	1	0	0	0	0	2	2	0	2	0	2	1	0	1	0	0	0 :	11
60. - 70. :	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0 :	6
50. - 60. :	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0 :	3
40. - 50. :	1	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0 :	4
30. - 40. :	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0 :	5
20. - 30. :	0	0	0	1	0	0	2	0	1	1	0	1	0	0	2	1	0 :	9
10. - 20. :	3	0	1	2	4	1	2	4	6	20	8	5	0	7	7	5	0 :	75
LT 10. :	26	19	12	15	18	16	20	28	44	88	61	15	23	41	25	28	0 :	479
TOTAL :	33	20	13	21	23	24	29	34	57	112	73	24	24	50	37	36	0	610
MEAN CONC.	9	6	2	14	6	24	15	6	12	5	6	12	4	5	12	8	0	8

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-3 SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	56	44	5	80	30	36	32	51	71	128	74	73	86	72	36	83	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0 :	4
70. - 80. :	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0 :	4
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0 :	2
50. - 60. :	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	2
40. - 50. :	0	1	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0 :	5
30. - 40. :	2	0	0	1	0	1	1	1	1	1	0	0	0	1	3	0	0 :	12
20. - 30. :	1	0	0	0	0	3	3	0	2	1	0	1	0	0	0	1	0 :	12
10. - 20. :	0	0	0	1	0	3	2	0	1	1	2	0	0	0	2	0	0 :	12
LT 10. :	29	19	13	18	22	17	23	32	52	107	68	20	23	48	32	33	0 :	556
TOTAL :	33	20	13	21	23	24	29	34	57	112	73	24	24	50	37	36	0	610
MEAN CONC.	5	2	1	6	4	7	6	4	4	3	3	9	4	2	6	5	0	4

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	22	40	7	41	10	42	38	11	43	11	37	11	3	11	37	11	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	1	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0 :	5
30. - 40. :	0	0	0	1	0	6	4	0	3	0	1	0	0	0	2	0	0 :	17
20. - 30. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
10. - 20. :	2	0	0	3	1	1	0	1	4	4	5	2	0	4	2	1	0 :	30
LT 10. :	30	20	13	16	22	16	25	33	48	108	67	22	24	46	33	35	0 :	553
TOTAL :	33	21	13	21	23	24	29	34	57	112	73	24	24	50	37	36	0	611
MEAN CONC.	2	2	1	5	1	11	6	2	5	2	2	2	9	1	3	1	0	3

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	86	78	76	80	66	77	76	84	74	86	86	80	70	80	83	82	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	1	0	0	1	0	0	0	4	0	11	3	1	0	1	1	1	0 :	24
60. - 80. :	18	11	9	5	13	17	23	16	38	66	28	7	9	35	28	27	0 :	350
40. - 60. :	16	13	7	13	12	7	10	19	20	41	36	16	14	16	18	17	0 :	275
20. - 40. :	3	0	0	0	1	2	1	2	8	13	17	6	2	9	1	1	0 :	66
LT 20. :	0	0	0	3	1	0	0	0	0	2	2	3	0	0	1	1	0 :	13
TOTAL :	38	24	16	22	27	26	34	41	66	133	86	33	25	61	49	47	0	728
MEAN CONC.	57	59	60	50	54	60	61	58	58	59	51	48	54	59	61	60	0	57

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1201	1156	1348	1119	1378	1158	1376	1432	1359	1353	1415	1377	1846	1328	2306	1824	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0 :	2
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0 :	2
LT 1600. :	27	19	13	13	13	17	17	24	40	86	53	20	15	39	31	32	0 :	459
TOTAL :	27	19	13	13	13	17	17	24	40	86	53	20	16	39	33	34	0	464
MEAN CONC.	1075	1072	1101	1077	1124	1072	1081	1109	1098	1082	1103	1129	1155	1110	1181	1151	0	1107

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1074	1016	1072	1024	1072	1009	992	1042	1075	1076	1071	1068	1096	1072	1092	1107	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	8	5	3	6	3	2	0	5	7	16	13	7	2	18	9	0	0 :	113
800. -1000. :	18	11	10	6	10	9	13	20	31	62	42	16	14	21	25	26	0 :	334
600. - 800. :	2	3	0	2	1	6	4	0	4	11	2	0	0	0	1	2	0 :	38
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	28	19	13	14	14	17	17	25	42	89	57	23	16	39	35	37	0	485
MEAN CONC.	950	921	959	942	959	890	901	969	938	928	954	972	950	996	953	961	0	948

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS

C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	295	306	299	296	306	333	681	455	345	354	435	308	749	261	1236	857	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
600. - 800. :	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	0 :	4
LT 600. :	27	19	13	13	13	17	16	24	40	86	53	20	15	39	31	32	0 :	458
TOTAL :	27	19	13	13	13	17	17	24	40	86	53	20	16	39	33	34	0	464
MEAN CONC.	119	150	141	125	154	181	179	134	155	150	141	135	204	113	221	180	0	154

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	7	13	7	13	7	13	7	13	7	7	7	7	7	7	7	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0 :	4
LT 10. :	35	21	14	21	23	22	29	35	56	116	74	33	22	58	44	36	0 :	639
TOTAL :	35	21	15	21	24	22	30	35	57	116	74	33	22	58	44	36	0	643
MEAN CONC.	0	0	1	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-R SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/76 TO 10/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	8	4	4	7	5	4	4	4	5	7	7	7	4	7	4	6	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	19	13	17	14	22	19	24	47	85	75	27	20	38	39	39	0 :	528
TOTAL :	30	19	13	17	14	22	19	24	47	85	75	27	20	38	39	39	0	528
MEAN CONC.	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-938

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	27	50	13	89	56	21	93	51	37	89	95	27	93	16	17	18	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	1	0	0	0	3	0	1	0	0	0	0 :	5
80. - 90. :	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0 :	4
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	1	0	0	1	0	1	1	1	2	0	0	1	0	0	0	0 :	6
40. - 50. :	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0 :	3
30. - 40. :	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0 :	4
20. - 30. :	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0 :	5
10. - 20. :	5	2	3	2	3	2	2	4	7	22	10	3	5	5	9	10	0 :	94
LT 10. :	25	23	21	15	23	37	40	28	55	82	44	31	23	32	34	29	0 :	542
TOTAL :	31	26	24	18	31	40	47	36	64	107	57	35	30	37	43	39	0	665
MEAN CONC.	5	6	4	9	9	3	10	8	6	7	10	3	8	4	4	5	0	6

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	26	50	12	89	40	21	93	51	87	89	95	12	93	16	7	15	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	1	0	0	0	3	0	1	0	0	0	0 :	5
80. - 90. :	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0 :	4
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	1	0	0	0	0	1	1	1	2	0	0	1	0	0	0	0 :	7
40. - 50. :	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0 :	3
30. - 40. :	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0 :	4
20. - 30. :	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0 :	4
10. - 20. :	1	1	1	0	3	2	2	4	3	17	6	1	5	1	0	2	0 :	49
LT 10. :	29	24	23	17	24	37	40	28	59	87	48	34	23	36	43	37	0 :	589
TOTAL :	31	26	24	18	31	40	47	36	64	107	57	35	30	37	43	39	0	665
MEAN CONC.	1	4	2	6	6	2	9	7	4	5	8	1	7	2	0	1	0	4

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	10	6	8	10	37	6	5	3	9	9	9	17	3	8	11	12	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	2	0	0	1	0	0	0	0	0	0	0	1	0	0	3	2	0 :	9
LT 10. :	29	26	24	17	30	40	47	36	64	107	57	34	30	37	40	37	0 :	655
TOTAL :	31	26	24	18	31	40	47	36	64	107	57	35	30	37	43	39	0	665
MEAN CONC.	2	1	1	2	2	0	0	0	1	0	1	1	0	1	2	2	0	1

0 = NO OBSERVATIONS

(02/14/79-RPJ)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AR23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	111	113	111	100	107	109	106	107	104	109	110	106	102	105	114	114	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	9	6	1	1	1	4	2	5	5	15	6	2	1	5	4	3	0 :	70
80. - 100. :	10	4	7	5	7	5	14	7	17	36	15	10	12	9	17	14	0 :	189
60. - 80. :	19	17	16	8	27	34	29	23	34	37	26	13	16	25	24	23	0 :	371
40. - 60. :	0	0	0	2	0	0	3	3	0	2	9	10	2	2	0	0	0 :	33
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	38	27	24	16	35	43	48	38	56	90	56	35	31	41	45	40	0	663
MEAN CONC.	84	81	77	75	75	77	77	79	82	84	77	73	79	79	80	80	0	79

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 548	NNE 396	NE 709	ENE 618	E 717	ESE 945	SE 496	SSE 1505	S 796	SSW 847	SW 410	WSW 389	W 726	WNW 586	NW 769	NNW 757	CALM 0	TOTAL
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
1250. -1500. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	27	14	14	13	25	27	30	22	39	83	30	19	21	22	28	29	0 :	443
TOTAL :	27	14	14	13	25	27	30	24	39	83	30	19	21	22	28	29	0	445
MEAN CONC.	342	320	399	368	297	410	321	447	362	361	332	327	370	374	381	342	0	359

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD (11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1912	2109	1219	2160	1795	1870	1939	1782	1971	1993	1973	1963	1949	1998	1312	1685	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0 :	3
1800. -2000. :	1	1	0	0	0	1	2	0	1	4	4	1	1	1	0	0	0 :	17
1600. -1800. :	2	0	0	0	2	3	3	2	0	1	0	0	0	0	0	2	0 :	15
LT 1600. :	28	24	19	14	30	39	44	34	49	96	49	33	28	36	40	36	0 :	599
TOTAL :	31	26	19	16	32	43	49	36	50	101	53	34	29	37	40	38	0	634
MEAN CONC.	1172	1175	1092	1203	1174	1191	1175	1125	1097	1103	1147	1123	1146	1153	1115	1142	0	1140

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	1026	1097	1055	939	1037	1002	1014	1015	1040	1015	1040	1006	1067	1049	1096	1061	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	4	1	1	0	1	2	3	1	4	2	3	2	5	7	3	2	0 :	41
800. -1000. :	27	25	18	16	31	41	46	35	46	99	50	32	24	30	37	36	0 :	593
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	31	26	19	16	32	43	49	36	50	101	53	34	29	37	40	38	0	634
MEAN CONC.	964	946	950	956	950	948	952	944	949	947	949	953	966	963	969	954	0	953

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	886	1133	289	1179	757	863	956	800	989	1010	1002	980	966	1010	350	702	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	1	0	2	0	0	0	0	0	1	1	0	0	1	0	0	0 :	6
800. -1000. :	1	1	0	0	0	1	2	1	1	3	3	1	1	0	0	0	0 :	15
600. - 800. :	2	0	0	0	2	4	3	1	0	1	0	0	0	0	0	2	0 :	15
LT 600. :	28	24	19	14	30	38	44	34	49	96	49	33	28	36	40	36	0 :	598
TOTAL :	31	26	19	16	32	43	49	36	50	101	53	34	29	37	40	38	0	634
MEAN CONC.	208	228	141	247	223	242	222	181	148	156	197	169	180	190	145	188	0	187

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	15	15	7	15	12	15	15	15	16	15	15	7	7	14	15	15	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	1	1	0	1	2	12	3	4	6	6	3	0	0	2	1	1	0 :	43
LT 10. :	37	26	24	17	33	33	48	35	58	103	54	36	31	39	44	39	0 :	657
TOTAL :	38	27	24	18	35	45	51	39	64	109	57	36	31	41	45	40	0	700
MEAN CONC.	0	1	0	1	1	3	1	1	1	1	1	1	0	1	1	0	0	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/76 TO 11/30/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	10	5	10	5	1	7	6	5	6	6	6	5	9	3	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	2
LT 10. :	38	26	24	17	35	45	51	39	64	109	57	36	31	41	45	40	0 :	698
TOTAL :	38	27	24	18	35	45	51	39	64	109	57	36	31	41	45	40	0	700
MEAN CONC.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	4	8	23	133	12	201	8	11	73	9	10	9	8	17	9	0	
GT 130. :	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0 :	2
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	1	2	0	1	0	0	1	0	0	0	0	0	0	0 :	5
10. - 20. :	0	0	0	2	1	1	0	0	1	3	0	1	0	0	1	0	0 :	10
LT 10. :	15	11	8	14	30	41	58	56	91	121	47	27	31	31	26	24	0 :	631
TOTAL :	15	11	8	17	35	42	60	56	92	126	47	23	31	31	27	24	0	650
MEAN CONC.	0	0	1	4	9	2	6	1	1	2	2	2	2	1	2	1	0	2

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	0	8	19	35	12	25	8	11	64	9	10	9	8	9	9	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0 :	3
10. - 20. :	0	0	0	3	0	1	0	0	1	3	0	1	0	0	0	0	0 :	9
LT 10. :	15	11	8	14	32	41	59	56	91	122	47	27	31	31	27	24	0 :	636
TOTAL :	15	11	8	17	35	42	60	56	92	126	47	28	31	31	27	24	0	650
MEAN CONC.	0	0	1	3	3	2	2	1	0	1	2	1	0	0	1	0	0	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	3	0	3	120	1	131	2	2	16	2	3	4	5	10	4	0	
GT 130. :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0 :	1
120. - 130. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0 :	2
LT 10. :	15	11	8	17	34	42	59	56	92	125	47	28	31	31	26	24	0 :	646
TOTAL :	15	11	8	17	35	42	60	56	92	126	47	28	31	31	27	24	0	650
MEAN CONC.	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	92	93	92	84	87	93	81	83	82	87	78	74	95	94	78	80	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	1	2	2	1	2	7	4	4	1	5	0	0	4	3	0	2	0 :	38
60. - 80. :	13	8	5	11	31	31	51	48	75	123	39	21	18	27	24	22	0 :	547
40. - 60. :	2	1	3	5	9	10	9	8	12	12	11	11	14	12	6	1	0 :	126
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	16	11	10	17	42	48	64	60	88	140	50	32	36	42	30	25	0	711
MEAN CONC.	69	71	68	63	65	68	67	67	66	68	65	64	64	65	65	68	0	66

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	666	599	783	1216	960	1050	1070	1111	1089	999	994	1058	788	834	885	905	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	1	0	1	1	1	2	0	0	1	0	0	0	0	0 :	7
LT 1000. :	17	9	11	16	39	39	63	58	93	131	48	29	35	36	27	25	0 :	676
TOTAL :	17	9	11	17	39	40	64	59	95	131	48	30	35	36	27	25	0	683
MEAN CONC.	361	316	447	627	465	474	405	469	507	406	411	414	431	362	400	387	0	435

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-R SHALE OIL PROJECT

TRAILER NO. - A323 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1596	1147	1223	2225	2681	1427	2095	1443	2757	1642	1133	1166	1176	1253	1108	1870	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0 :	2
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
2000. -2200. :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0 :	1
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
1600. -1800. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
LT 1600. :	11	8	8	9	28	29	43	38	62	91	24	17	18	23	17	19	0 :	445
TOTAL :	11	8	8	10	29	29	44	38	63	92	24	17	18	23	17	20	0	451
MEAN CONC.	1061	1010	1036	1180	1132	1044	1083	1033	1106	1050	1000	1003	1022	1034	1016	1108	0	1061

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 1368	NNE 1004	NE 1156	ENE 1309	E 1301	ESE 1304	SE 1306	SSE 1307	S 1319	SSW 1242	SW 1174	WSW 1183	W 1183	WNW 1192	NW 1185	NNW 1190	CALM 0	TOTAL
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	2	0	0	1	1	2	2	4	12	6	0	0	0	0	0	0	0 :	30
1000. -1200. :	2	1	2	2	3	6	13	9	18	14	20	7	13	8	10	6	0 :	134
800. -1000. :	11	9	8	11	33	32	43	38	57	97	25	20	19	25	17	17	0 :	462
600. - 800. :	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0 :	2
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	15	10	10	14	37	40	58	51	87	118	45	28	32	33	27	23	0	628
MEAN CONC.	990	953	972	977	954	974	978	977	1016	965	1013	979	1002	983	1019	978	0	985

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	228	158	231	1037	1583	145	1172	221	1611	718	153	210	251	314	177	928	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
1400. -1600. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0 :	2
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
600. - 800. :	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0 :	2
LT 600. :	11	8	8	9	27	29	43	38	62	91	24	17	18	23	17	19	0 :	444
TOTAL :	11	8	8	10	29	29	44	38	63	92	24	17	18	23	17	20	0	451
MEAN CONC.	120	63	107	199	190	104	133	100	122	118	86	91	85	103	79	160	0	119

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	4	0	2	2	6	4	0	0	10	0	0	0	0	3	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
LT 10. :	16	10	10	19	42	48	65	62	98	137	50	32	35	42	30	26	0 :	722
TOTAL :	16	10	10	19	42	48	65	62	98	138	50	32	35	42	30	26	0	723
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/76 TO 12/31/76)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	0	4	0	0	7	10	11	10	10	10	4	1	1	0	1	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	3	5	1	2	1	0	0	0	0	0	0	0 :	12
LT 10. :	16	8	10	19	42	43	56	59	96	137	50	32	34	42	30	26	0 :	700
TOTAL :	16	8	10	19	42	46	61	60	98	138	50	32	34	42	30	26	0	712
MEAN CONC.	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	7	1	0	23	15	24	13	10	12	6	1	6	6	11	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0 :	2
10. - 20. :	0	0	0	0	1	1	0	2	1	1	0	0	0	0	1	0	0 :	7
LT 10. :	7	10	3	9	26	42	42	56	73	100	28	12	26	16	12	6	0 :	463
TOTAL :	7	10	3	9	28	43	43	58	74	101	28	12	26	16	13	6	0	477
MEAN CONC.	0	1	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0

0 = NO OBSERVATIONS

II B-959

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	7	1	0	9	15	24	9	4	7	6	0	5	1	11	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0 :	1
10. - 20. :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0 :	2
LT 10. :	7	10	3	9	28	42	42	58	74	101	23	12	26	16	12	6	0 :	474
TOTAL :	7	10	3	9	28	43	43	58	74	101	28	12	26	16	13	6	0	477
MEAN CONC.	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

II B-960

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AP23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	9	2	4	9	3	3	1	0	4	4	4	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	7	10	3	9	28	43	43	58	74	101	28	13	27	16	13	6	0 :	479
TOTAL :	7	10	3	9	28	43	43	58	74	101	28	13	27	16	13	6	0	479
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	83	79	79	87	86	88	83	88	85	87	81	83	31	83	73	79	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	2	0	0	1	1	4	7	9	21	3	2	3	2	1	0	0	0 :	56
60. - 80. :	12	15	5	16	43	68	64	65	81	137	34	14	21	20	12	12	0 :	619
40. - 60. :	0	0	0	0	1	3	0	0	4	6	4	4	8	9	2	14	0 :	55
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0 :	3
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	14	15	5	17	45	75	71	74	106	146	40	21	32	30	14	28	0	733
MEAN CONC.	73	71	74	71	70	71	72	72	73	71	70	68	63	62	66	57	0	70

0 = NO OBSERVATIONS

II B-962

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	374	559	558	931	529	636	720	544	650	633	581	467	549	434	342	733	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	10	10	5	10	24	38	44	40	52	62	19	11	18	11	8	28	0 :	390
TOTAL :	10	10	5	10	24	38	44	40	52	62	19	11	18	11	8	28	0	390
MEAN CONC.	305	393	394	385	319	344	357	309	325	309	307	299	324	335	284	360	0	330

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1122	1520	1166	1427	1400	1560	1478	1607	1628	1621	1501	1209	1507	1104	1104	1176	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0 :	3
LT 1600. :	10	12	5	12	31	59	57	60	83	130	35	19	26	20	9	28	0 :	596
TOTAL :	10	12	5	12	31	59	57	61	84	131	35	19	26	20	9	28	0	599
MEAN CONC.	1058	1120	1088	1082	1034	1071	1034	1078	1060	1072	1083	1074	1097	1056	1047	1060	0	1067

0 = NO OBSERVATIONS

(02/14/79-RPT)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 933	NNE 951	NE 939	ENE 941	E 945	ESE 974	SE 956	SSE 1018	S 956	SSW 970	SW 966	WSW 972	W 1000	WNW 958	NW 962	NNW 916	CALM 0	TOTAL
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0 :	2
800. -1000. :	9	8	3	11	30	47	50	58	88	116	33	16	24	29	12	24	0 :	558
600. - 800. :	4	6	2	4	8	22	17	10	13	22	4	4	6	0	1	4	0 :	127
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	13	14	5	15	38	69	67	69	101	138	37	20	31	29	13	28	0	687
MEAN CONC.	853	821	834	852	857	855	853	888	890	884	886	892	893	924	892	859	0	877

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	449	568	453	486	466	674	539	667	690	677	555	404	558	192	357	461	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	2	0	1	1	1	0	0	0	0	0	0	0 :	5
LT 600. :	10	12	5	12	31	57	57	60	83	130	35	19	26	20	9	28	0 :	594
TOTAL :	10	12	5	12	31	59	57	61	84	131	35	19	26	20	9	28	0	599
MEAN CONC.	227	316	253	251	192	228	193	195	176	190	199	184	212	140	180	201	0	198

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	6	0	14	16	16	16	17	10	16	15	0	13	12	7	11	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	1	4	7	9	4	1	15	2	0	3	5	0	9	0 :	60
LT 10. :	14	15	5	16	41	68	62	70	105	127	38	21	29	25	14	19	0 :	669
TOTAL :	14	15	5	17	45	75	71	74	106	142	40	21	32	30	14	28	0	729
MEAN CONC.	0	0	0	1	1	1	2	1	0	1	0	0	1	2	0	7	0	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/77 TO 1 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	0	0	3	2	3	3	5	4	5	0	0	1	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	14	15	5	17	43	72	66	69	105	141	39	20	27	21	10	28	0 :	692
TOTAL :	14	15	5	17	43	72	66	69	105	141	39	20	27	21	10	28	0	692
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	0	0	1	0	1	1	1	0	1	1	1	1	6	1	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0 :	646
TOTAL :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0	646
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	0	0	1	0	1	1	1	0	1	1	1	1	1	1	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0 :	646
TOTAL :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0	645
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0 :	646
TOTAL :	26	12	12	17	22	22	31	47	63	95	70	29	45	76	45	34	0	646
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	86	85	82	82	80	80	87	82	89	88	88	84	96	95	93	86	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	7	4	1	1	1	1	7	4	10	31	18	6	18	26	9	11	0 :	155
60. - 80. :	21	9	11	14	22	22	26	43	51	63	49	23	25	41	36	23	0 :	479
40. - 60. :	0	0	0	2	2	0	1	1	2	2	3	1	5	9	2	1	0 :	31
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	28	13	12	17	25	23	34	48	63	96	70	30	48	76	47	35	0	665
MEAN CONC.	76	75	75	67	69	73	76	72	74	76	75	73	74	74	75	76	0	74

0 = NO OBSERVATIONS

/7

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	637	557	520	606	381	410	759	575	564	820	534	472	702	592	647	1115	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
LT 1000. :	18	13	8	15	20	19	29	40	35	68	34	20	19	46	33	22	0 :	439
TOTAL :	18	13	8	15	20	19	29	40	35	68	34	20	19	46	33	23	0	440
MEAN CONC.	281	340	304	350	265	252	354	317	298	328	303	272	287	300	353	371	0	314

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1250	1152	1335	1207	1115	1145	1884	1760	1337	1868	1214	1792	1661	1848	1301	1273	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	0 :	4
1600. -1800. :	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0 :	3
LT 1600. :	26	12	9	14	21	19	27	42	46	74	49	23	34	59	44	28	0 :	527
TOTAL :	26	12	9	14	21	19	28	43	46	76	49	24	35	60	44	28	0	534
MEAN CONC.	1060	928	990	960	923	949	989	938	943	1033	1046	1034	1065	1087	1050	1015	0	1014

0 = NO OBSERVATIONS

II B-974

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 878	NNE 871	NE 797	ENE 867	E 874	ESE 891	SE 958	SSE 904	S 862	SSW 909	SW 940	WSW 871	W 886	WNW 957	NW 894	NNW 895	CALM 0	TOTAL
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	6	3	0	2	1	5	9	8	2	12	12	2	3	11	12	9	0 :	97
600. - 800. :	14	6	7	10	15	7	14	27	32	54	32	17	23	29	27	15	0 :	329
400. - 600. :	2	1	0	0	1	0	0	0	3	1	0	1	5	8	3	1	0 :	26
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	22	10	7	12	17	12	23	35	37	67	44	20	31	48	42	25	0	452
MEAN CONC.	743	769	759	771	740	796	778	779	726	745	766	729	698	730	745	781	0	749

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	614	381	538	395	495	462	925	1066	582	1121	516	1098	894	1093	568	473	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0 :	4
800. -1000. :	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0 :	3
600. - 800. :	1	0	0	0	0	0	0	0	0	1	0	1	2	1	0	0	0 :	6
LT 600. :	21	10	7	12	17	12	22	34	37	65	44	18	28	45	42	25	0 :	439
TOTAL :	22	10	7	12	17	12	23	35	37	67	44	20	31	48	42	25	0	452
MEAN CONC.	308	122	212	157	148	107	205	141	218	276	268	307	370	351	302	241	0	257

0 = NO OBSERVATIONS

II B-976

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	8	1	0	2	4	2	8	9	3	7	9	11	1	8	1	6	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0 :	1
LT 10. :	27	12	11	16	23	23	33	46	59	86	67	28	47	72	42	33	0 :	625
TOTAL :	27	12	11	16	23	23	33	46	59	86	67	29	47	72	42	33	0	626
MEAN CONC.	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(2 /01/77 TO 2 /28/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	1	1	1	0	0	0	1	1	0	0	1	1	2	1	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	26	13	12	17	25	23	34	48	63	96	69	30	44	71	40	35	0 :	646
TOTAL :	26	13	12	17	25	23	34	48	63	96	69	30	44	71	40	35	0	646
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	4	4	0	3	4	0	3	3	4	3	3	3	1	4	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	22	15	7	10	29	32	29	45	99	134	57	23	39	42	39	42	0 :	664
TOTAL :	22	15	7	10	29	32	29	45	99	134	57	23	39	42	39	42	0	664
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	3	0	0	3	2	0	3	3	3	3	3	2	0	1	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	22	15	7	10	29	32	29	45	99	134	57	23	39	42	39	42	0 :	664
TOTAL :	22	15	7	10	29	32	29	45	99	134	57	23	39	42	39	42	0	664
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - A923 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	1	2	0	1	2	0	0	1	2	2	2	0	0	1	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	23	15	8	10	29	32	29	45	99	134	57	23	39	42	39	42	0 :	666
TOTAL :	23	15	8	10	29	32	29	45	99	134	57	23	39	42	39	42	0	666
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	92	89	91	87	85	87	88	100	105	105	102	91	92	90	89	88	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	1	4	9	6	0	0	0	0	0	0 :	20
80. - 100. :	6	7	5	4	16	16	9	18	46	78	25	11	17	16	17	7	0 :	298
60. - 80. :	21	8	3	6	13	16	19	25	46	44	27	12	19	23	22	35	0 :	339
40. - 60. :	0	0	0	0	0	1	1	4	5	6	1	0	5	2	0	0	0 :	25
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0 :	1
TOTAL :	27	15	8	10	29	33	29	48	101	137	59	23	42	41	39	42	0	683
MEAN CONC.	76	78	81	77	78	78	77	78	80	83	82	79	74	76	77	75	0	79

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	541	537	554	465	520	507	529	546	555	619	617	574	1008	540	543	479	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0 :	1
LT 1000. :	16	9	4	5	18	18	19	36	70	81	47	18	30	18	14	2	0 :	405
TOTAL :	16	9	4	5	18	18	19	36	70	81	47	18	31	18	14	2	0	406
MEAN CONC.	373	328	384	386	392	381	326	389	394	375	383	316	414	380	329	478	0	378

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1183	1220	1136	1176	1196	1213	1148	1179	1180	1595	1320	1152	1171	1176	1394	1328	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	26	14	8	8	29	34	25	46	100	137	57	24	45	40	38	42	0 :	673
TOTAL :	26	14	8	8	29	34	25	46	100	137	57	24	45	40	38	42	0	673
MEAN CONC.	1101	1102	1094	1124	1073	1070	1083	1088	1093	1113	1094	1094	1080	1103	1149	1123	0	1100

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	897	877	865	879	880	890	879	890	879	886	940	884	892	871	877	871	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	15	7	5	4	12	14	5	23	53	60	36	14	19	8	14	13	0 :	302
600. - 800. :	11	7	3	4	17	20	20	23	47	77	22	11	26	32	24	29	0 :	373
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	26	14	8	8	29	34	25	46	100	137	58	25	45	40	38	42	0	675
MEAN CONC.	817	803	815	802	790	783	778	799	800	796	820	804	803	759	784	788	0	796

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	417	462	388	407	432	446	428	467	524	863	480	418	414	462	565	540	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
600. - 800. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
LT 600. :	26	14	8	8	29	34	25	46	100	134	57	24	45	40	38	42	0 :	670
TOTAL :	26	14	8	8	29	34	25	46	100	137	57	24	45	40	38	42	0	673
MEAN CONC.	283	299	278	322	283	286	304	288	293	316	275	293	276	344	364	335	0	304

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	1	1	0	2	2	0	0	4	8	0	2	10	0	1	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0 :	1
LT 10. :	26	15	6	10	29	34	30	48	102	139	61	25	47	44	39	42	0 :	697
TOTAL :	26	15	6	10	29	34	30	48	102	139	61	25	48	44	39	42	0	698
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/77 TO 3 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	4	0	0	6	7	7	6	6	6	6	6	0	3	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	27	15	8	10	29	34	27	41	96	138	60	25	49	44	40	42	0 :	685
TOTAL :	27	15	8	10	29	34	27	41	96	138	60	25	49	44	40	42	0	635
MEAN CONC.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	14	7	9	13	16	16	16	16	16	17	15	15	13	13	16	20	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
10. - 20. :	2	0	0	1	6	5	2	3	5	10	5	2	2	3	2	3	0 :	51
LT 10. :	27	15	16	13	27	32	39	54	59	82	57	30	41	48	68	33	0 :	641
TOTAL :	29	15	16	14	33	37	41	57	64	92	62	32	43	51	70	37	0	693
MEAN CONC.	2	1	1	2	3	3	2	1	1	2	1	1	2	3	2	4	0	2

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	10	5	4	13	16	14	13	14	14	15	15	15	13	13	7	12	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	1	0	0	1	4	2	1	1	3	5	4	2	2	2	0	1	0 :	29
LT 10. :	28	15	16	13	29	35	40	56	61	87	58	30	41	49	70	36	0 :	664
TOTAL :	29	15	16	14	33	37	41	57	64	92	62	32	43	51	70	37	0	693
MEAN CONC.	1	1	1	1	2	1	1	0	1	1	1	1	0	1	0	1	0	1

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	6	0	6	6	9	9	9	9	9	9	6	4	6	6	8	9	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	29	15	16	14	33	37	41	57	64	92	62	32	43	51	70	37	0 :	693
TOTAL :	29	15	16	14	33	37	41	57	64	92	62	32	43	51	70	37	0	693
MEAN CONC.	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (03) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	104	103	96	103	95	103	97	106	105	114	117	114	107	103	104	107	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	6	3	0	3	0	1	0	8	10	16	17	5	2	7	6	7	0 :	91
80. - 100. :	14	3	8	5	14	23	23	27	32	38	18	8	18	18	27	20	0 :	296
60. - 80. :	11	9	8	4	16	14	13	20	20	30	12	13	19	17	33	10	0 :	249
40. - 60. :	0	0	1	3	4	2	7	3	3	12	14	6	4	9	4	2	0 :	74
20. - 40. :	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0 :	2
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	31	15	17	15	34	40	43	58	65	97	62	32	43	51	70	39	0	712
MEAN CONC.	87	81	77	78	74	81	77	82	83	81	81	78	78	78	79	85	0	80

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	654	663	496	534	749	740	940	619	689	705	1300	776	622	607	613	652	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	13	9	10	8	10	16	18	20	17	35	30	14	19	28	45	22	0 :	314
TOTAL :	13	9	10	8	10	16	18	20	17	35	31	14	19	28	45	22	0	315
MEAN CONC.	454	444	421	469	455	425	568	424	461	432	457	455	483	495	466	466	0	462

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	1535	1444	1609	1360	1528	1358	1372	1383	1433	1495	1456	1413	1459	1506	1466	1483	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
LT 1600. :	26	15	15	15	31	39	41	54	63	96	62	31	43	50	65	36	0 :	682
TOTAL :	26	15	16	15	31	39	41	54	63	96	62	31	43	50	65	36	0	683
MEAN CONC.	1251	1197	1219	1234	1202	1186	1212	1176	1228	1195	1191	1172	1237	1236	1244	1205	0	1210

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1085	1063	1027	1070	1038	975	1044	1035	1042	1066	1086	1022	1053	1052	1107	1042	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	4	1	1	2	1	0	1	2	1	4	4	4	7	17	16	8	0 :	73
800. -1000. :	22	14	15	13	30	39	40	52	62	92	58	27	35	33	50	28	0 :	610
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0 :	1
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	26	15	16	15	31	39	41	54	63	96	62	31	43	50	66	36	0	684
MEAN CONC.	951	934	916	938	903	895	895	899	893	895	908	901	927	963	942	952	0	913

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	568	380	641	403	569	468	472	436	476	565	493	552	502	568	579	583	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
LT 600. :	26	15	15	15	31	39	41	54	63	96	62	31	43	50	65	36	0 :	682
TOTAL :	26	15	16	15	31	39	41	54	63	96	62	31	43	50	65	36	0	683
MEAN CONC.	300	262	302	295	299	290	317	277	335	300	282	270	309	273	300	252	0	294

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	2	2	0	1	0	0	0	1	1	1	1	0	0	1	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	15	17	15	34	40	43	58	65	97	62	32	43	51	70	38	0 :	710
TOTAL :	30	15	17	15	34	40	43	58	65	97	62	32	43	51	70	38	0	710
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/77 TO 4 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	8	0	1	3	3	3	2	2	2	1	1	1	2	1	1	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	28	15	17	15	34	40	43	58	65	97	62	32	43	51	70	38	0 :	708
TOTAL :	28	15	17	15	34	40	43	58	65	97	62	32	43	51	70	38	0	703
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-998

'79
(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	0	0	0	3	0	3	1	7	3	3	1	0	7	7	8	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	17	12	8	15	10	15	39	64	133	157	87	27	18	22	40	27	0 :	691
TOTAL :	17	12	8	15	10	15	39	64	133	157	87	27	18	22	40	27	0	691
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	6	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	17	12	8	15	10	15	39	64	133	157	87	27	18	22	40	27	0 :	691
TOTAL :	17	12	8	15	10	15	39	64	133	157	87	27	18	22	40	27	0	691
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	1	0	1	0	4	2	2	1	0	3	4	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	17	12	8	15	10	15	39	64	133	157	87	27	18	22	40	27	0 :	691
TOTAL :	17	12	8	15	10	15	39	64	133	157	87	27	13	22	40	27	0	691
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	117	109	120	103	100	107	117	119	124	127	123	125	116	120	119	122	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	2	0	0	0	0	0	12	15	5	1	0	1	0	1	0 :	37
100. - 120. :	12	6	0	1	1	4	9	6	32	64	33	8	13	12	23	13	0 :	237
80. - 100. :	4	6	4	8	6	7	23	40	73	75	34	12	2	8	16	11	0 :	329
60. - 80. :	1	0	3	7	3	6	8	19	18	17	19	7	3	2	1	3	0 :	117
40. - 60. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	17	12	9	16	10	17	40	65	135	172	91	28	13	23	40	28	0	721
MEAN CONC.	102	96	91	84	84	87	91	87	94	99	95	90	98	99	101	99	0	95

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	792	708	602	658	570	550	708	673	1084	1066	794	777	328	838	537	1015	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0 :	3
LT 1000. :	7	6	5	10	6	12	19	39	88	107	57	19	12	15	23	12	0 :	437
TOTAL :	7	6	5	10	6	12	19	39	89	108	57	19	12	15	23	13	0	440
MEAN CONC.	557	436	424	400	424	418	475	428	456	425	458	492	500	402	400	434	0	443

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1159	1350	1110	1397	1102	1129	1817	1148	1813	1987	1503	1152	1152	1136	1401	1303	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0 :	3
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	7	7	6	11	7	13	20	39	101	132	65	19	12	16	26	15	0 :	496
TOTAL :	7	7	6	11	7	13	21	39	102	133	65	19	12	16	26	15	0	499
MEAN CONC.	1089	1138	1082	1117	1077	1075	1127	1070	1140	1105	1098	1100	1102	1084	1154	1140	0	1111

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	949	1175	944	1168	941	941	1168	947	1188	1189	1191	935	937	939	1183	1156	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	1	0	1	0	0	1	0	10	5	2	0	0	0	3	2	0 :	25
800. -1000. :	7	6	6	10	7	13	20	39	92	128	62	19	12	16	23	13	0 :	473
600. - 800. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	7	7	6	11	7	13	21	39	102	133	65	19	12	16	26	15	0	499
MEAN CONC.	928	962	916	946	914	919	925	912	940	918	922	918	923	920	961	949	0	927

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	215	212	202	228	199	189	906	211	945	1142	330	229	228	223	278	271	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
800. -1000. :	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0 :	2
600. - 800. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
LT 600. :	7	7	6	11	7	13	20	39	100	132	65	19	12	16	26	15	0 :	495
TOTAL :	7	7	6	11	7	13	21	39	102	133	65	19	12	16	26	15	0	499
MEAN CONC.	160	176	166	170	162	156	202	158	199	187	176	182	179	164	193	191	0	183

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	2	0	0	0	0	0	0	4	4	4	0	0	4	1	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	17	12	9	16	10	17	40	65	135	172	91	28	18	23	40	28	0 :	721
TOTAL :	17	12	9	16	10	17	40	65	135	172	91	28	18	23	40	28	0	721
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(5 /01/77 TO 5 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	5	1	1	3	3	3	3	8	5	3	3	1	4	5	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	17	12	9	16	10	17	40	65	135	172	91	28	18	23	40	28	0 :	721
TOTAL :	17	12	9	16	10	17	40	65	135	172	91	28	18	23	40	28	0	721
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-1008

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	19	0	0	3	9	2	0	4	2	1	0	0	12	23	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
10. - 20. :	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0 :	3
LT 10. :	10	11	9	12	21	36	30	36	45	99	51	15	8	25	26	17	0 :	451
TOTAL :	10	12	9	12	21	36	30	36	45	99	51	15	8	27	27	17	0	455
MEAN CONC.	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PEPIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	7	0	0	3	9	0	0	3	0	0	0	0	12	23	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0 :	1
LT 10. :	10	12	9	12	21	36	30	36	45	99	51	15	8	26	26	17	0 :	453
TOTAL :	10	12	9	12	21	36	30	36	45	99	51	15	8	27	27	17	0	455
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	7	0	0	0	0	1	0	2	1	1	0	0	7	4	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	10	13	9	14	21	36	31	38	48	105	54	16	9	29	28	17	0 :	478
TOTAL :	10	13	9	14	21	36	31	38	48	105	54	16	9	29	28	17	0	478
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	130	119	97	96	111	106	111	112	128	142	147	139	108	136	137	133	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0 :	5
120. - 140. :	4	0	0	0	0	0	0	0	3	20	10	4	0	4	6	6	0 :	57
100. - 120. :	2	4	0	0	1	3	6	6	17	45	20	10	1	3	2	4	0 :	124
80. - 100. :	9	8	8	11	14	16	23	25	26	70	41	11	8	22	19	14	0 :	325
60. - 80. :	4	8	3	7	14	20	11	18	20	37	16	9	1	6	18	5	0 :	197
40. - 60. :	0	0	0	0	1	0	0	0	0	1	2	1	0	1	0	2	0 :	8
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	19	20	11	18	30	39	40	49	66	174	93	35	10	36	45	31	0	716
MEAN CONC.	95	87	87	81	81	80	87	86	92	95	97	94	90	90	90	94	0	91

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	514	925	303	360	311	316	316	719	320	387	361	714	288	367	350	423	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	13	10	7	8	27	28	29	36	48	104	62	29	6	31	30	23	0 :	491
TOTAL :	13	10	7	8	27	28	29	36	48	104	62	29	6	31	30	23	0	491
MEAN CONC.	300	343	290	278	267	275	278	293	270	276	281	279	269	270	265	265	0	278

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AP23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1280	1468	1251	1235	1204	1270	1218	1269	1446	1410	1483	1381	1238	1324	1522	1377	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	12	14	10	11	17	23	25	35	40	121	64	25	6	28	23	19	0 :	473
TOTAL :	12	14	10	11	17	23	25	35	40	121	64	25	6	28	23	19	0	473
MEAN CONC.	1201	1176	1154	1165	1126	1144	1141	1122	1152	1124	1132	1159	1176	1169	1197	1197	0	1146

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	979	1158	984	970	933	938	930	937	1173	1184	1164	959	936	1169	1098	978	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	1	0	0	0	0	0	0	2	3	1	0	0	1	1	0	0 :	9
800. -1000. :	15	13	11	10	22	24	25	40	45	154	82	29	6	25	24	21	0 :	546
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	15	14	11	10	22	24	25	40	47	157	83	29	6	26	25	21	0	555
MEAN CONC.	893	910	890	888	897	889	888	888	906	898	899	886	874	885	903	905	0	896

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	369	349	355	376	307	370	339	374	408	520	606	512	394	384	423	412	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
LT 600. :	12	13	10	9	17	23	24	33	38	114	61	24	5	26	22	19	0 :	450
TOTAL :	12	13	10	9	17	23	24	33	38	114	62	24	5	26	22	19	0	451
MEAN CONC.	303	267	268	263	235	256	251	235	249	228	239	274	302	279	293	291	0	251

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	2	2	2	2	4	2	2	0	3	3	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	19	20	10	17	28	39	40	47	66	163	86	35	10	36	45	31	0 :	692
TOTAL :	19	20	10	17	28	39	40	47	66	163	86	35	10	36	45	31	0	692
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/77 TO 6 /30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	15	13	5	4	10	3	5	1	4	9	5	4	1	3	17	6	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	2	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0 :	5
LT 10. :	17	19	9	17	27	37	40	47	66	152	82	35	10	36	44	31	0 :	669
TOTAL :	19	20	9	17	28	37	40	47	66	152	82	35	10	36	45	31	0	674
MEAN CONC.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-1018

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	6	0	25	0	0	96	156	6	8	3	2	0	0	3	0	
GT 130. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0 :	2
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	7	9	3	13	11	17	20	30	45	99	66	31	18	17	10	10	0 :	406
TOTAL :	7	9	3	13	12	17	20	32	47	99	66	31	18	17	10	10	0	411
MEAN CONC.	0	0	2	0	2	0	0	4	3	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	6	0	25	0	0	87	129	6	8	3	2	0	0	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
10. - 20. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
LT 10. :	7	9	3	13	11	17	20	30	45	99	66	31	18	17	10	10	0 :	406
TOTAL :	7	9	3	13	12	17	20	32	47	99	66	31	18	17	10	10	0	411
MEAN CONC.	0	0	2	0	2	0	0	4	3	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	5	17	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
LT 10. :	7	9	3	13	12	17	20	32	46	99	66	31	18	17	10	10	0 :	410
TOTAL :	7	9	3	13	12	17	20	32	47	99	66	31	18	17	10	10	0	411
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 116	NNE 106	NE 105	ENE 99	E 116	ESE 117	SE 114	SSE 114	S 116	SSW 115	SW 122	WSW 116	W 117	WNW 118	NW 114	NNW 118	CALM 0	TOTAL
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0 :	2
100. - 120. :	2	2	1	0	3	3	3	6	9	29	21	9	7	10	7	6	0 :	118
80. - 100. :	3	4	1	10	5	11	8	16	25	57	36	16	9	4	3	5	0 :	213
60. - 80. :	2	3	2	3	6	5	9	13	13	16	11	7	3	3	0	0	0 :	96
40. - 60. :	0	0	0	2	0	1	1	2	2	0	1	0	0	0	0	0	0 :	9
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	7	9	4	15	14	20	21	37	49	102	71	32	19	17	10	11	0	438
MEAN CONC.	93	88	84	81	86	85	83	84	87	91	94	93	95	99	105	101	0	90

0 = NO OBSERVATIONS

II B-1022

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	565	501	368	556	562	601	543	729	622	610	554	531	500	487	549	496	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	7	8	4	14	14	20	21	36	49	94	69	32	19	16	10	11	0 :	424
TOTAL :	7	8	4	14	14	20	21	36	49	94	69	32	19	16	10	11	0	424
MEAN CONC.	324	320	289	270	329	328	278	307	312	268	260	259	278	316	354	318	0	287

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1170	1845	1238	1226	1245	1606	1748	1946	1528	1848	1704	1979	1210	1899	1789	1515	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0 :	5
1600. -1800. :	0	0	0	0	0	1	1	1	0	1	2	0	0	1	1	0	0 :	8
LT 1600. :	5	5	4	13	11	14	19	29	38	86	65	30	16	11	5	10	0 :	361
TOTAL :	5	6	4	13	11	15	20	31	38	88	67	31	16	13	6	10	0	374
MEAN CONC.	1104	1251	1172	1115	1142	1229	1210	1193	1136	1118	1136	1156	1117	1207	1210	1167	0	1151

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	916	921	887	1132	1116	933	931	963	938	1088	966	955	965	974	979	947	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0 :	3
800. -1000. :	5	8	4	13	13	20	21	33	36	89	63	31	17	14	7	10	0 :	384
600. - 800. :	1	0	0	1	0	0	0	1	10	4	5	0	0	0	0	0	0 :	22
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	6	8	4	15	14	20	21	34	46	94	68	31	17	14	7	10	0	409
MEAN CONC.	836	868	868	863	890	869	859	858	850	853	853	852	861	880	874	871	0	858

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	352	926	374	374	334	726	820	1008	662	923	824	1036	356	966	901	575	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0 :	2
800. -1000. :	0	1	0	0	0	0	1	0	0	2	1	0	0	1	1	0	0 :	7
600. - 800. :	0	0	0	0	0	1	2	1	1	0	1	0	0	1	0	0	0 :	7
LT 600. :	5	5	4	13	11	14	17	29	37	86	65	30	16	11	5	10	0 :	358
TOTAL :	5	6	4	13	11	15	20	31	38	88	67	31	16	13	6	10	0	374
MEAN CONC.	283	399	304	276	278	377	354	338	299	271	284	304	259	328	339	295	0	299

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	1	0	0	0	0	2	1	0	0	0	1	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	7	9	4	15	14	20	21	39	51	102	70	32	19	17	10	11	0 :	441
TOTAL :	7	9	4	15	14	20	21	39	51	102	70	32	19	17	10	11	0	441
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(7 /01/77 TO 7 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	0	3	5	4	0	3	4	5	4	4	3	1	0	1	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	7	8	4	15	14	20	21	39	51	102	70	32	19	17	10	11	0 :	440
TOTAL :	7	8	4	15	14	20	21	39	51	102	70	32	19	17	10	11	0	440
MEAN CONC.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-1028

77

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	0	0	0	7	0	2	4	3	7	5	4	2	0	1	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0 :	316
TOTAL :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0	316
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AR23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	7	0	0	4	3	7	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0 :	316
TOTAL :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0	316
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	0	0	0	0	0	1	0	0	1	3	3	0	0	0	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0 :	316
TOTAL :	18	5	6	12	12	17	12	22	33	50	44	17	8	14	22	24	0	316
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	133	118	124	133	132	134	116	129	145	146	162	117	114	129	137	133	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
140. - 160. :	0	0	0	0	0	0	0	0	2	3	9	0	0	0	0	0	0 :	14
120. - 140. :	5	0	1	4	5	2	0	6	13	9	3	0	0	2	9	6	0 :	65
100. - 120. :	5	3	2	3	1	4	4	4	8	20	14	10	4	6	8	11	0 :	107
80. - 100. :	3	1	2	3	2	6	7	10	10	19	14	1	2	2	5	4	0 :	91
60. - 80. :	7	3	2	2	4	6	7	5	6	5	6	6	5	2	2	6	0 :	74
40. - 60. :	2	0	1	1	2	2	5	6	3	5	9	6	3	4	0	0	0 :	49
20. - 40. :	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0 :	3
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	22	7	8	13	14	20	23	31	42	64	56	23	14	16	24	27	0	404
MEAN CONC.	94	92	89	100	92	86	78	88	102	98	97	82	80	90	110	102	0	94

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	259	253	245	235	391	493	251	269	293	283	337	274	465	260	277	239	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	20	6	7	12	12	18	15	22	31	52	53	19	10	10	22	22	0 :	331
TOTAL :	20	6	7	12	12	18	15	22	31	52	53	19	10	10	22	22	0	331
MEAN CONC.	196	195	196	196	211	219	196	200	199	207	223	202	244	212	193	181	0	205

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1269	1179	1228	1274	1209	1292	1317	1260	1193	1249	1240	1211	1272	1172	1237	1245	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	20	6	7	12	12	17	15	20	30	50	53	18	10	10	20	19	0 :	319
TOTAL :	20	6	7	12	12	17	15	20	30	50	53	18	10	10	20	19	0	319
MEAN CONC.	1106	1066	1115	1117	1097	1099	1138	1095	1093	1080	1076	1093	1071	1068	1121	1073	0	1092

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	845	841	818	868	827	843	841	843	842	837	836	854	839	818	823	850	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	18	2	4	8	6	11	12	15	13	36	37	14	6	7	15	15	0 :	219
600. - 800. :	2	4	3	4	6	6	3	5	17	14	16	4	4	3	5	4	0 :	100
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	20	6	7	12	12	17	15	20	30	50	53	18	10	10	20	19	0	319
MEAN CONC.	816	806	806	813	799	809	813	809	798	806	804	814	805	806	807	812	0	807

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	454	337	409	416	403	458	479	440	384	427	421	392	467	368	419	437	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	20	6	7	12	12	17	15	20	30	50	53	18	10	10	20	19	0 :	319
TOTAL :	20	6	7	12	12	17	15	20	30	50	53	18	10	10	20	19	0	319
MEAN CONC.	290	260	309	304	297	290	324	285	294	274	271	278	265	262	314	261	0	284

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX	0	0	0	0	0	0	1	1	0	3	2	0	1	1	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	24	7	8	13	14	22	22	35	42	64	56	20	11	16	24	27	0 :	405
TOTAL :	24	7	8	13	14	22	22	35	42	64	56	20	11	16	24	27	0	405
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(8 /01/77 TO 8 /31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	4	1	4	4	4	3	4	5	8	10	3	3	4	4	3	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
LT 10. :	21	7	7	13	12	19	17	24	35	57	49	18	10	15	24	26	0 :	354
TOTAL :	21	7	7	13	12	19	17	24	35	57	50	18	10	15	24	26	0	355
MEAN CONC.	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	1	2	1	0	1	2	0	0	1	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	3	7	7	7	5	8	11	4	3	2	0	0	0 :	57
TOTAL :	0	0	0	0	3	7	7	7	5	8	11	4	3	2	0	0	0	57
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	3	7	7	7	5	8	11	4	3	2	0	0	0 :	57
TOTAL :	0	0	0	0	3	7	7	7	5	8	11	4	3	2	0	0	0	57
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AR23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	4	7	6	7	7	8	11	10	10	6	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0 :	5
LT 10. :	0	0	0	0	3	7	7	7	5	9	8	3	2	2	0	0	0 :	53
TOTAL :	0	0	0	0	3	7	7	7	5	9	11	4	3	2	0	0	0	58
MEAN CONC.	0	0	0	0	2	3	3	4	2	4	8	8	5	0	0	0	0	5

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	99	102	95	92	100	107	110	109	106	94	0	0	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	1	0	0	1	3	12	4	2	0	0	0	0 :	23
80. - 100. :	0	0	0	0	3	6	7	7	4	6	1	0	1	2	0	0	0 :	37
60. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	89	88	88	86	90	97	105	107	100	0	0	0	0	107

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	199	199	214	215	203	310	252	226	212	233	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0 :	60
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	184	182	180	185	170	216	225	223	196	0	0	0	0	223

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	1083	1085	1099	1100	1096	1097	1117	1123	1113	1103	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0 :	60
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	1072	1072	1020	1085	1068	1028	1079	1105	1040	0	0	0	0	1199

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	805	809	807	810	810	1031	822	885	810	815	0	0	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
800. -1000. :	0	0	0	0	3	7	6	5	2	7	12	4	2	2	0	0	0 :	50
600. - 800. :	0	0	0	0	0	0	1	2	3	1	1	0	1	0	0	0	0 :	9
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	803	804	805	803	801	832	810	830	795	0	0	0	0	918

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	277	280	292	295	286	292	314	317	305	288	0	0	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0 :	60
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	268	268	215	282	267	212	268	275	244	0	0	0	0	284

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0 :	60
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(9 /01/77 TO 9 / 3/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0 :	60
TOTAL :	0	0	0	0	3	7	7	7	5	9	13	4	3	2	0	0	0	60
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	5	4	5	11	9	9	10	11	3	5	0	6	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0 :	3
LT 10. :	0	0	0	3	1	1	3	6	8	7	1	1	1	0	1	0	0 :	33
TOTAL :	0	0	0	3	1	1	4	6	8	8	2	1	1	0	1	0	0	36
MEAN CONC.	0	0	0	3	4	5	6	3	4	5	6	3	5	0	0	0	0	5

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	5	4	5	9	7	9	8	6	3	5	0	6	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	3	1	1	4	6	8	8	2	1	1	0	1	0	0 :	36
TOTAL :	0	0	0	3	1	1	4	6	8	8	2	1	1	0	1	0	0	36
MEAN CONC.	0	0	0	3	4	5	4	3	4	5	4	3	5	0	0	0	0	4

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	3	1	2	1	3	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	3	1	1	4	6	8	8	2	1	1	0	1	0	0 :	36
TOTAL :	0	0	0	3	1	1	4	6	8	8	2	1	1	0	1	0	0	36
MEAN CONC.	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	64	59	105	79	144	103	83	78	86	88	97	88	76	80	133	79	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
100. - 120. :	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0 :	2
80. - 100. :	0	0	0	0	0	0	2	0	3	6	11	2	0	1	3	0	0 :	28
60. - 80. :	1	0	3	7	21	23	49	62	49	80	80	30	14	14	24	10	0 :	467
40. - 60. :	0	3	1	9	16	18	12	22	20	39	15	16	4	5	2	2	0 :	184
20. - 40. :	0	0	1	0	1	3	4	3	2	2	0	2	0	0	0	0	0 :	18
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
TOTAL :	1	3	6	16	39	45	67	87	74	127	106	50	18	20	32	12	0	703
MEAN CONC.	64	56	63	60	63	59	63	62	64	64	69	64	66	65	67	69	0	64

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	651	0	1142	1643	1168	1376	1428	1514	1394	1470	1483	955	440	291	281	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0 :	2
1250. -1500. :	0	0	0	0	0	0	1	1	0	3	3	1	0	0	0	0	0 :	9
1000. -1250. :	0	0	0	1	2	2	2	1	2	2	0	2	0	0	0	0	0 :	14
LT 1000. :	0	2	0	1	9	16	25	16	25	23	25	5	4	3	7	3	0 :	164
TOTAL :	0	2	0	2	12	18	28	18	28	28	28	3	4	3	7	3	0	189
MEAN CONC.	0	360	0	612	481	513	473	356	449	467	352	644	510	289	168	0	0	437

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	1384	1524	1393	2411	3439	1353	1875	1361	1355	1736	3073	1191	1294	2093	1651	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0 :	1
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0 :	1
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
1800. -2000. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0 :	2
LT 1600. :	0	2	3	9	21	25	40	47	45	72	55	27	10	9	19	7	0 :	391
TOTAL :	0	2	3	9	22	26	40	48	45	72	56	28	10	9	20	8	0	398
MEAN CONC.	0	1219	1307	1080	1156	1141	1077	1074	1085	1069	1084	1196	1057	1057	1166	1140	0	1101

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	1016	1585	1199	2087	1613	1554	2715	1546	1811	1369	2771	1435	1063	1871	1092	0	
GT 2600. :	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0 :	2
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0 :	2
1800. -2000. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0 :	2
1600. -1800. :	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0 :	2
1400. -1600. :	0	0	2	0	1	1	2	1	2	1	0	1	1	0	1	0	0 :	13
1200. -1400. :	0	0	1	0	1	0	1	2	0	1	4	1	1	0	1	0	0 :	13
1000. -1200. :	0	1	0	1	3	2	4	3	11	12	6	6	1	1	4	2	0 :	57
800. -1000. :	0	1	0	5	10	20	27	29	25	37	34	11	5	5	9	4	0 :	222
600. - 800. :	0	0	0	2	4	2	4	7	6	13	10	1	0	2	0	0	0 :	51
400. - 600. :	0	0	0	0	0	0	0	0	0	0	1	3	2	1	0	0	0 :	7
200. - 400. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
LT 200. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
TOTAL :	0	2	3	8	20	26	38	45	44	66	55	25	10	9	16	6	0	373
MEAN CONC.	0	913	1479	835	991	967	959	929	942	933	909	1051	931	846	1089	971	0	955

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	574	152	306	373	2608	493	849	399	471	507	460	511	431	337	559	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0 :	1
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	2	3	8	20	25	38	44	44	66	55	25	10	9	16	6	0 :	371
TOTAL :	0	2	3	8	20	26	38	45	44	66	55	25	10	9	16	6	0	373
MEAN CONC.	0	305	50	189	191	200	145	182	161	164	188	172	173	178	137	196	0	172

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	1	1	9	3	3	2	2	2	3	2	1	0	4	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	1	3	6	16	38	44	67	87	74	128	106	50	18	20	32	12	0 :	702
TOTAL :	1	3	6	16	38	44	67	87	74	128	106	50	18	20	32	12	0	702
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(10/01/77 TO 10/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	3	3	5	6	6	7	7	7	6	5	2	3	7	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	1	3	6	16	39	45	68	87	76	133	108	53	23	21	32	12	0 :	723
TOTAL :	1	3	6	16	39	45	68	87	76	133	108	53	23	21	32	12	0	723
MEAN CONC.	0	0	2	0	1	0	0	1	1	1	1	0	0	0	1	0	0	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	64	66	68	76	62	72	74	76	76	81	83	84	83	73	74	74	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	0	0	0	0	0	2	2	2	1	0	0	0	0 :	7
60. - 80. :	2	5	1	2	1	21	25	25	29	39	27	7	12	13	13	10	0 :	232
40. - 60. :	1	2	3	3	7	17	13	27	47	85	17	22	23	34	26	1	0 :	328
20. - 40. :	0	0	1	0	0	0	1	6	4	9	6	1	3	1	2	2	0 :	36
LT 20. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
TOTAL :	3	7	5	5	9	38	39	58	80	135	52	32	39	48	41	13	0	604
MEAN CONC.	62	60	52	57	47	59	62	57	57	56	53	56	55	54	53	60	0	57

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	143	0	0	319	1011	1327	1187	1122	1304	192	205	210	265	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0 :	2
1000. -1250. :	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0 :	5
LT 1000. :	0	0	1	0	0	1	1	1	2	3	0	2	1	15	5	0	0 :	32
TOTAL :	0	0	1	0	0	1	2	3	4	4	1	2	1	15	5	0	0	39
MEAN CONC.	0	0	143	0	0	319	955	878	1013	628	1304	186	205	0	0	0	0	424

0 = NO OBSERVATIONS

(02/15/79-RFI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	2	2	2	4	2	5	5	5	5	2	2	9	10	2	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0 :	1
LT 10. :	2	6	6	5	10	40	40	60	81	147	59	34	40	48	37	13	0 :	628
TOTAL :	2	6	6	5	10	40	40	60	81	147	59	34	40	49	37	13	0	629
MEAN CONC.	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(11/01/77 TO 11/30/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	4	3	6	20	22	18	11	23	19	22	7	19	16	20	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	1	1	0	0	1	0	1	0	0	0	1	0	0 :	5
10. - 20. :	0	0	0	0	1	1	1	1	3	3	1	0	2	2	2	0	0 :	17
LT 10. :	2	7	5	5	8	38	39	59	76	143	56	34	37	46	34	12	0 :	601
TOTAL :	2	7	5	5	10	40	40	60	80	146	58	34	39	48	37	12	0	623
MEAN CONC.	0	0	0	1	6	5	3	2	1	0	1	0	1	1	2	0	0	1

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TPAILER NO. - AP23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	0	0	0	60	58	61	67	71	73	70	73	67	70	74	76	0	0	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 80. :	0	0	0	1	0	3	5	9	7	28	15	3	7	14	4	0	0 :	96
40. - 60. :	0	0	0	0	2	1	2	2	1	32	20	10	10	7	2	0	0 :	39
20. - 40. :	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0 :	6
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	1	2	4	7	11	8	65	36	13	17	21	6	0	0	191
MEAN CONC.	0	0	0	60	51	60	58	66	69	56	56	54	58	62	0	0	0	57

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPT)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	1	1	1	2	3	3	6	1	2	0	5	4	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	1	2	4	7	11	8	67	36	13	17	21	6	0	0 :	193
TOTAL :	0	0	0	1	2	4	7	11	8	67	36	13	17	21	6	0	0	193
MEAN CONC.	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(12/01/77 TO 12/31/77)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	1	2	4	7	8	5	57	32	6	2	5	3	0	0 :	132
TOTAL :	0	0	0	1	2	4	7	8	5	57	32	6	2	5	3	0	0	132
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-1078

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-9 SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	24	0	0	15	19	11	11	8	15	15	9	0	19	57	151	15	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
29. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 29. :	0	1	0	0	3	5	3	1	0	6	3	0	0	2	1	2	1 :	28
LT 10. :	5	4	1	1	13	19	38	29	60	46	18	10	12	19	20	7	0 :	302
TOTAL :	5	5	1	1	16	24	41	30	60	52	21	10	12	21	23	11	1	334
MEAN CONC.	0	4	0	0	3	3	1	2	0	2	3	0	0	1	5	20	15	2

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - A923 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	18	0	0	0	3	11	7	3	3	3	0	3	19	34	64	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
29. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 29. :	0	1	0	0	0	0	1	0	0	0	0	0	0	2	1	2	0 :	7
LT 10. :	5	4	1	1	16	24	40	30	60	52	21	10	14	19	21	8	1 :	327
TOTAL :	5	5	1	1	16	24	41	30	60	52	21	10	14	21	23	11	1	336
MEAN CONC.	0	3	0	0	0	0	0	0	0	0	0	0	0	1	2	10	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-8 SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	3	0	0	10	10	7	5	7	10	23	0	2	0	17	57	10	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
29. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 29. :	0	0	0	0	1	4	0	0	0	4	3	0	0	0	2	1	1 :	16
LT 10. :	5	5	1	1	15	20	41	30	60	48	18	10	14	21	22	9	0 :	320
TOTAL :	5	5	1	1	16	24	41	30	60	52	21	10	14	21	24	11	1	337
MEAN CONC.	0	0	0	0	2	2	0	0	0	1	2	0	0	0	1	6	10	1

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	68	68	63	66	68	68	76	74	78	74	72	74	66	68	74	74	68	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 80. :	4	4	2	1	10	13	17	21	44	28	6	2	4	11	13	7	2 :	194
40. - 60. :	2	3	1	1	9	6	23	12	24	24	21	9	9	9	8	8	2 :	171
20. - 40. :	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0 :	4
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	6	7	3	2	19	19	40	33	68	52	28	11	15	21	26	15	4	369
MEAN CONC.	64	58	60	57	59	62	58	60	63	61	54	55	52	57	61	59	60	59

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - A923 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	2	2	5	5	7	5	5	10	7	7	5	5	5	5	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
29. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 29. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
LT 10. :	6	7	3	2	19	19	43	33	68	53	28	11	15	21	26	15	4 :	373
TOTAL :	6	7	3	2	19	19	43	33	69	53	23	11	15	21	26	15	4	374
MEAN CONC.	1	0	0	2	3	3	2	2	2	2	2	3	3	2	1	2	0	2

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(1 /01/78 TO 1 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	1	2	2	2	6	5	2	2	0	2	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
29. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 29. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	6	7	3	2	20	25	46	37	76	63	32	13	15	23	26	15	4 :	413
TOTAL :	6	7	3	2	20	25	46	37	76	63	32	13	15	23	26	15	4	413
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF N TROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	1	0	1	2	2	0	0	0	1	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	22	9	5	8	21	27	67	52	73	100	80	9	20	19	20	17	28 :	577
TOTAL :	22	9	5	3	21	27	67	52	73	100	80	9	20	19	20	17	28	577
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	125	117	109	111	113	119	121	113	123	131	129	113	121	113	123	115	105	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	1	0	0	0	0	0	1	0	2	18	6	0	1	0	1	0	0 :	30
100. - 120. :	14	6	2	2	7	6	14	5	18	36	27	3	12	4	11	12	6 :	185
80. - 100. :	7	3	2	5	11	19	44	40	33	41	27	5	7	12	9	3	14 :	282
60. - 80. :	0	0	1	0	1	1	6	5	15	5	16	1	0	1	1	1	8 :	62
40. - 60. :	0	0	0	1	1	1	2	2	5	1	1	0	0	2	0	1	0 :	17
20. - 40. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
LT 20. :	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0 :	2
TOTAL :	22	9	5	8	21	27	67	52	73	101	79	9	20	19	22	17	28	579
MEAN CONC.	103	105	92	90	92	93	91	89	90	102	95	98	102	90	100	101	90	95

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PEPIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

II B-1096

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	13	10	10	13	10	10	13	13	10	10	10	10	10	0	13	7	10	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	3	1	1	2	3	7	13	6	6	7	6	1	2	0	3	0	6 :	67
LT 10. :	19	9	4	6	18	20	54	46	67	93	74	8	18	19	19	17	22 :	513
TOTAL :	22	10	5	8	21	27	67	52	73	100	80	9	20	19	22	17	28	580
MEAN CONC.	2	3	5	4	1	3	2	1	1	2	2	1	2	0	1	0	3	2

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(2 /01/78 TO 2 /28/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	2	0	4	4	4	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	22	10	5	8	21	27	67	52	74	101	80	9	20	19	22	17	28 :	582
TOTAL :	22	10	5	8	21	27	67	52	74	101	80	9	20	19	22	17	28	582
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/15/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	8	3	5	9	1	6	3	1	5	5	3	7	1	22	17	24	7	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0 :	2
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0 :	4
LT 10. :	23	7	10	9	15	36	58	45	65	78	47	15	10	15	28	18	21 :	500
TOTAL :	23	7	10	9	15	36	58	45	65	78	47	15	10	16	31	20	21	506
MEAN CONC.	2	0	1	1	0	0	0	0	0	0	0	1	0	3	3	2	0	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-9 SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	3	5	9	0	4	3	1	5	5	0	6	0	20	14	21	7	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0 :	2
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
LT 10. :	22	6	10	9	15	36	57	45	65	78	47	15	10	15	29	19	21 :	499
TOTAL :	22	6	10	9	15	36	57	45	65	78	47	15	10	16	31	20	21	503
MEAN CONC.	1	0	0	1	0	0	0	0	0	0	0	0	0	2	2	1	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	1	1	1	2	3	3	2	2	3	2	2	1	2	2	1	1	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	29	7	11	9	16	38	61	48	85	93	52	17	11	23	35	27	24 :	586
TOTAL :	29	7	11	9	16	38	61	48	85	93	52	17	11	23	35	27	24	586
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	135	109	107	113	123	125	135	135	143	143	137	137	113	115	125	131	125	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0 :	6
120. - 140. :	2	0	0	0	1	4	4	4	3	16	8	2	0	0	2	2	1 :	49
100. - 120. :	5	1	1	1	3	4	16	6	34	23	23	5	6	8	22	6	2 :	166
80. - 100. :	20	8	8	6	12	21	26	27	36	46	20	5	2	9	6	12	4 :	268
60. - 80. :	6	3	4	4	4	11	17	11	12	14	6	5	3	9	7	5	19 :	140
40. - 60. :	1	0	0	0	0	0	1	1	1	0	0	1	3	0	0	0	0 :	8
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	34	12	13	11	20	40	64	49	88	103	57	18	14	26	37	25	26	637
MEAN CONC.	92	88	87	83	90	88	91	90	97	99	99	91	88	88	100	94	76	93

0 = NO OBSERVATIONS

(02/1*/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	344	344	344	229	344	344	459	344	459	459	344	344	229	344	459	229	344	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	16	7	9	7	11	16	27	23	35	41	20	7	5	6	4	7	19 :	260
TOTAL :	16	7	9	7	11	16	27	23	35	41	20	7	5	6	4	7	19	260
MEAN CONC.	273	295	255	229	229	251	221	224	262	283	258	246	229	249	316	213	236	252

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	3078	2685	2750	2685	2619	2488	2357	2423	3209	2750	1833	2161	1440	1571	3012	2947	1571	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0 :	2
3000. -3200. :	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	3
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
2600. -2800. :	1	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	0 :	7
2400. -2600. :	1	0	0	1	0	1	0	1	1	0	0	0	0	0	1	2	0 :	8
2200. -2400. :	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0 :	4
2000. -2200. :	0	0	0	1	0	0	0	3	1	3	0	1	0	0	0	0	0 :	9
1800. -2000. :	1	0	1	0	0	1	0	1	3	3	2	0	0	0	0	0	0 :	12
1600. -1800. :	0	0	1	0	0	1	1	1	3	6	3	0	0	0	0	0	0 :	16
LT 1600. :	3	1	4	2	5	9	19	16	20	19	12	3	4	3	1	1	12 :	134
TOTAL :	8	2	8	5	6	12	21	22	30	35	17	4	4	3	3	4	12	196
MEAN CONC.	2095	1964	1809	1951	1615	1566	1425	1542	1620	1624	1390	1621	1260	1528	2336	2243	1408	1609

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	916	916	916	916	851	982	982	916	982	982	916	916	916	916	916	916	1047	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3 :	3
800. -1000. :	14	6	7	4	3	18	16	15	21	34	12	3	3	5	3	5	15 :	184
600. - 800. :	2	1	2	3	8	2	15	11	15	9	8	4	2	1	1	2	1 :	87
400. - 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	16	7	9	7	11	20	31	26	36	43	20	7	5	6	4	7	19	274
MEAN CONC.	871	860	858	832	791	880	826	838	831	856	812	823	838	862	867	842	930	848

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/73)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	609	609	609	609	609	609	609	609	916	785	609	609	609	609	609	609	609	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
800. -1000. :	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0 :	2
600. - 800. :	16	7	9	7	11	20	31	26	36	44	20	7	5	6	4	7	19 :	275
LT 600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	16	7	9	7	11	20	31	26	38	44	20	7	5	6	4	7	19	277
MEAN CONC.	609	609	609	609	609	609	609	609	623	613	609	609	609	609	609	609	609	611

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	10	10	13	20	18	13	18	15	26	7	13	10	0	13	7	13	18	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0 :	3
10. - 20. :	1	1	2	2	2	1	2	3	3	0	1	3	0	1	0	4	2 :	28
LT 10. :	33	11	11	8	17	39	61	46	83	100	56	14	14	25	37	23	24 :	602
TOTAL :	34	12	13	11	19	40	63	49	88	100	57	17	14	26	37	27	26	633
MEAN CONC.	0	0	2	4	2	0	0	1	1	0	0	1	0	0	0	2	1	1

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(3 /01/78 TO 3 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	8	8	8	8	8	1	0	0	0	0	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	31	11	12	10	20	40	64	47	86	95	56	17	14	26	36	25	25 :	615
TOTAL :	31	11	12	10	20	40	64	47	86	95	56	17	14	26	36	25	25	615
MEAN CONC.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	0	0	0	0	1	1	5	0	1	3	0	0	1	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	24	12	7	6	5	13	31	29	130	117	83	49	31	42	31	24	6 :	640
TOTAL :	24	12	7	6	5	13	31	29	130	117	83	49	31	42	31	24	6	640
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	24	12	7	6	5	13	31	29	130	117	83	49	31	42	31	24	6 :	640
TOTAL :	24	12	7	6	5	13	31	29	130	117	83	49	31	42	31	24	6	640
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	12	11	9	9	4	8	11	11	9	9	11	9	9	12	9	9	9	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	3	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0 :	8
LT 10. :	21	11	7	6	5	13	30	28	130	117	82	49	31	41	31	24	6 :	632
TOTAL :	24	12	7	6	5	13	31	29	130	117	83	49	31	42	31	24	6	640
MEAN CONC.	4	5	2	5	2	3	3	4	2	3	4	4	4	4	4	3	3	3

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	112	112	94	94	86	86	98	94	137	120	137	120	112	103	103	103	36	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0 :	6
100. - 120. :	4	2	0	0	0	0	0	0	14	22	11	11	5	8	6	3	0 :	86
80. - 100. :	11	6	3	1	1	5	10	10	56	48	24	16	5	15	15	13	1 :	240
60. - 80. :	8	4	4	4	3	8	11	15	42	40	33	14	15	15	10	5	2 :	233
40. - 60. :	0	0	0	1	1	0	2	2	6	4	7	6	6	3	0	3	3 :	44
20. - 40. :	1	0	0	0	0	0	0	0	3	0	2	1	0	0	0	0	0 :	7
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	24	12	7	6	5	13	23	27	122	115	80	49	31	41	31	24	6	616
MEAN CONC.	84	85	81	74	72	76	76	77	83	85	82	82	75	85	87	82	61	82

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 689	NNE 574	NE 459	ENE 459	E 459	ESE 459	SE 574	SSE 689	S 574	SSW 574	SW 804	WSW 689	W 574	WNW 689	NW 574	NNW 574	CALM 574	TOTAL
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1750. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1250. -1500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 1000. :	24	12	7	6	4	12	31	26	112	91	70	38	27	39	30	22	6 :	557
TOTAL :	24	12	7	6	4	12	31	26	112	91	70	38	27	39	30	22	6	557
MEAN CONC.	416	440	427	383	402	364	396	420	378	371	415	441	421	412	402	397	440	400

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2161	2357	1702	1702	1506	2030	2292	2095	2292	2226	2357	2226	2161	2357	2423	2357	2030	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
2200. -2400. :	0	1	0	0	0	0	2	0	1	1	1	2	0	1	0	2	0 :	11
2000. -2200. :	1	0	0	0	0	1	0	1	5	6	5	2	1	1	2	3	1 :	29
1800. -2000. :	0	0	0	0	0	0	0	0	8	8	6	6	2	4	2	1	0 :	37
1600. -1800. :	3	2	1	2	0	2	4	5	17	6	8	6	0	4	3	1	1 :	65
LT 1600. :	5	2	0	2	1	5	18	19	60	49	36	23	21	17	4	2	1 :	265
TOTAL :	9	5	1	4	1	8	24	25	91	70	56	39	24	27	12	9	3	408
MEAN CONC.	1513	1598	1702	1571	1506	1481	1536	1485	1518	1539	1542	1613	1457	1477	1686	1892	1659	1542

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1047	1047	1047	982	982	982	982	1047	1047	1178	1113	1047	1047	982	1113	1047	1047	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1000. -1200. :	9	1	2	0	0	0	0	1	2	7	6	4	1	0	3	3	1 :	40
800. -1000. :	15	11	5	6	3	10	24	25	104	95	71	43	30	38	25	16	5 :	526
600. - 800. :	0	0	0	0	1	2	5	3	15	4	4	2	0	2	2	3	0 :	43
400. - 600. :	0	0	0	0	0	0	2	0	4	0	0	0	0	0	0	0	0 :	6
200. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	24	12	7	6	4	12	31	29	125	106	81	49	31	40	30	22	6	615
MEAN CONC.	982	960	982	938	851	889	866	894	865	909	922	929	904	916	930	940	960	908

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1178	1309	720	785	654	1113	1309	1113	1375	1178	1506	1244	1178	1375	1309	1375	982	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0 :	1
1200. -1400. :	0	1	0	0	0	0	2	0	3	0	0	1	0	1	1	2	0 :	11
1000. -1200. :	1	0	0	0	0	1	2	1	7	9	5	3	2	2	2	3	0 :	38
800. -1000. :	0	0	0	0	0	0	2	2	10	6	7	6	1	3	2	1	1 :	41
600. - 800. :	3	2	1	3	1	3	7	8	25	11	8	13	5	4	3	1	1 :	99
LT 600. :	5	2	0	1	0	4	11	14	47	46	36	16	17	17	4	2	1 :	223
TOTAL :	9	5	1	4	1	8	24	25	92	72	57	39	25	27	12	9	3	413
MEAN CONC.	574	628	720	638	654	614	693	584	645	593	591	675	531	548	709	924	720	623

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	7	5	7	18	15	15	13	26	7	7	10	7	20	13	7	7	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0 :	2
10. - 20. :	0	0	0	0	1	1	2	1	8	0	0	2	0	0	5	0	0 :	20
LT 10. :	24	12	7	6	4	12	29	28	121	116	84	47	30	41	26	24	6 :	617
TOTAL :	24	12	7	6	5	13	31	29	130	116	84	49	30	42	31	24	6	639
MEAN CONC.	1	3	0	3	3	3	2	3	2	1	1	2	1	1	2	1	3	2

0 = NO OBSERVATIONS

(02/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - A823 PERIOD(4 /01/78 TO 4 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2	2	2	1	0	33	20	16	20	16	16	2	5	34	5	22	4	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0 :	2
20. - 30. :	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	1	0 :	5
10. - 20. :	0	0	0	0	0	0	0	1	4	2	2	0	0	0	0	0	0 :	9
LT 10. :	24	12	5	6	5	12	30	28	123	115	82	49	31	42	31	22	6 :	623
TOTAL :	24	12	5	6	5	13	31	29	130	117	84	49	31	43	31	23	6	639
MEAN CONC.	0	0	0	0	0	2	0	1	1	0	0	0	0	1	0	1	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX)

C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10 :	660
TOTAL :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10	660
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	1	1	3	3	0	1	1	1	1	1	1	1	1	1	1	1	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10 :	660
TOTAL :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10	660
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10 :	660
TOTAL :	30	13	9	13	14	23	15	22	91	152	79	24	25	43	52	45	10	660
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	68	68	58	68	88	94	74	74	98	98	94	74	78	78	78	78	68	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	1	2	0	0	3	13	6	0	0	0	0	0	0 :	25
60. - 80. :	5	1	0	2	2	10	3	5	23	43	12	4	9	17	14	12	1 :	163
40. - 60. :	18	10	6	7	7	8	10	14	49	76	41	14	10	17	34	32	6 :	359
20. - 40. :	6	2	3	5	5	7	2	2	13	14	14	7	6	9	4	2	2 :	103
LT 20. :	0	0	0	1	0	2	1	2	6	23	9	0	0	1	1	0	1 :	47
TOTAL :	29	13	9	15	15	29	16	23	94	169	82	25	25	44	53	46	10	697
MEAN CONC.	51	49	44	46	52	52	50	50	52	51	49	51	55	55	55	57	44	52

0 = NO OBSERVATIONS

II B-1122

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1034	804	804	689	1149	919	919	574	804	2069	919	1034	919	1034	1034	1724	459	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3750. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3500. -3750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3250. -3500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3000. -3250. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2750. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2500. -2750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2250. -2500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2250. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
1750. -2000. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
1500. -1750. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
1250. -1500. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
1000. -1250. :	4	0	0	0	1	0	0	0	0	0	0	1	0	1	3	1	0 :	11
LT 1000. :	24	12	9	13	12	21	14	21	93	145	79	21	25	40	46	42	10 :	627
TOTAL :	28	12	9	13	13	21	14	21	93	148	79	22	25	41	49	44	10	642
MEAN CONC.	480	392	306	318	424	405	386	317	330	347	352	444	363	426	450	441	298	376

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2357	2488	2226	2292	2947	3077	3012	3274	2816	3143	2685	2422	2292	2619	2422	2619	2292	
GT 4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3800. -4000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3600. -3800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3400. -3600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3200. -3400. :	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0 :	1
3000. -3200. :	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0 :	3
2800. -3000. :	0	0	0	0	1	0	0	1	1	5	0	0	0	0	0	0	0 :	8
2600. -2800. :	0	0	0	0	0	1	1	0	5	1	1	0	0	1	0	2	0 :	12
2400. -2600. :	0	1	0	0	1	0	0	0	6	9	2	1	0	3	2	4	0 :	29
2200. -2400. :	3	1	1	3	0	0	2	2	8	23	4	0	2	2	2	1	2 :	56
2000. -2200. :	4	1	0	1	1	3	4	5	16	17	10	1	4	9	2	3	2 :	83
1800. -2000. :	4	1	1	0	2	1	2	1	19	19	15	4	1	3	6	2	1 :	82
1600. -1800. :	0	1	0	1	0	1	0	1	8	11	8	3	4	4	5	3	0 :	50
LT 1600. :	17	7	7	8	9	14	4	10	31	62	39	13	14	21	34	29	5 :	324
TOTAL :	28	12	9	13	14	21	14	21	94	148	79	22	25	43	51	44	10	648
MEAN CONC.	963	862	458	911	874	972	1609	1303	1585	1640	1339	931	1142	1146	710	834	1205	1260

0 = NO OBSERVATIONS

II B-1124

(03/[illegible]/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4)

C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N 1112	NNE 982	NE 1047	ENE 1112	E 1112	ESE 1178	SE 1112	SSE 1112	S 1178	SSW 1112	SW 1112	WSW 1047	W 1047	WNW 1112	NW 982	NNW 1309	CALM 982	TOTAL
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2000. -2200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1800. -2000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1600. -1800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1400. -1600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
1200. -1400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0 :	2
1000. -1200. :	1	0	1	1	1	3	2	3	16	13	4	1	1	1	0	1	0 :	49
800. -1000. :	12	5	1	5	4	5	5	8	42	91	49	10	14	22	19	16	6 :	314
600. - 800. :	1	0	0	0	0	3	1	1	8	18	5	0	0	1	0	0	0 :	38
400. - 600. :	0	0	0	0	0	2	2	2	10	8	2	0	1	1	0	0	0 :	28
200. - 400. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
LT 200. :	14	7	7	7	8	8	4	8	16	18	19	11	9	18	32	26	4 :	216
TOTAL :	28	12	9	13	13	21	14	22	93	148	79	22	25	43	51	45	10	648
MEAN CONC.	462	387	218	453	362	536	626	568	730	783	680	467	586	525	345	404	569	600

0 = NO OBSERVATIONS

II B-1125

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS

C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1441	1506	1309	1374	2488	1898	2030	2162	2031	2423	1768	1440	1376	1507	1571	1571	1309	
GT 3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 0
2800. -3000. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 0
2600. -2800. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 0
2400. -2600. :	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	: 2
2200. -2400. :	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	: 4
2000. -2200. :	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	: 4
1800. -2000. :	0	0	0	0	1	1	0	1	3	0	0	0	0	0	0	0	0	: 6
1600. -1800. :	0	0	0	0	0	1	1	0	3	4	3	0	0	0	0	0	0	: 12
1400. -1600. :	1	1	0	0	0	0	2	3	10	9	0	1	0	5	3	4	0	: 39
1200. -1400. :	2	1	1	3	0	2	2	2	9	25	10	0	2	8	2	3	2	: 74
1000. -1200. :	4	1	0	1	2	2	3	2	14	22	8	1	3	3	2	3	2	: 73
800. -1000. :	4	1	1	0	1	0	1	0	22	15	14	5	2	4	6	4	1	: 81
600. - 800. :	2	1	0	1	0	1	0	3	4	12	6	4	7	2	4	1	1	: 49
LT 600. :	15	7	7	8	9	14	4	9	28	55	38	11	11	21	34	29	4	: 304
TOTAL :	28	12	9	13	14	21	14	21	94	148	79	22	25	43	51	44	10	648
MEAN CONC.	500	474	240	458	538	436	982	755	863	856	659	464	555	621	364	442	635	662

0 = NO OBSERVATIONS

II B-1126

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	13	10	10	10	13	10	13	10	13	13	13	18	13	13	13	13	10	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	6	3	2	4	5	18	8	9	23	40	13	7	6	9	12	5	1 :	171
LT 10. :	24	10	9	11	10	11	8	14	73	132	70	18	19	36	43	41	9 :	538
TOTAL :	30	13	11	15	15	29	16	23	96	172	83	25	25	45	55	46	10	709
MEAN CONC.	4	4	4	4	5	7	6	5	4	4	3	4	4	4	4	3	3	4

0 = NO OBSERVATIONS

II B-1127

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(6 /01/78 TO 6 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	2	1	0	0	1	2	2	2	1	0	1	2	2	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	32	13	11	15	15	29	16	23	95	174	84	26	25	45	55	46	10 :	714
TOTAL :	32	13	11	15	15	29	16	23	95	174	84	26	25	45	55	46	10	714
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(03/14 79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	11	0	11	37	45	31	9	3	3	15	7	5	37	22	7	5	28	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
30. - 40. :	0	0	0	2	5	1	0	0	0	0	0	0	1	0	0	0	0 :	9
20. - 30. :	0	0	0	0	3	1	0	0	0	0	0	0	0	1	0	0	1 :	6
10. - 20. :	1	0	1	2	4	6	0	0	0	1	0	0	2	0	0	0	0 :	17
LT 10. :	13	4	12	69	147	77	27	13	41	21	32	17	38	23	12	5	13 :	564
TOTAL :	14	4	13	73	160	85	27	13	41	22	32	17	41	24	12	5	14	597
MEAN CONC.	3	0	2	3	3	2	1	0	0	1	1	0	2	1	1	2	2	2

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER A820 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	9	0	1	3	15	5	1	0	0	9	0	0	3	5	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0 :	1
LT 10. :	14	4	13	73	159	85	27	13	41	22	32	17	43	24	12	5	14 :	598
TOTAL :	14	4	13	73	160	85	27	13	41	22	32	17	43	24	12	5	14	599
MEAN CONC.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	4	0	7	24	29	18	6	2	2	4	4	3	24	11	4	3	18	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	2	5	0	0	0	0	0	0	0	1	0	0	0	0 :	8
10. - 20. :	0	0	0	0	4	2	0	0	0	0	0	0	1	1	0	0	1 :	9
LT 10. :	14	4	13	71	151	83	27	13	41	22	32	17	41	23	12	5	13 :	582
TOTAL :	14	4	13	73	160	85	27	13	41	22	32	17	43	24	12	5	14	599
MEAN CONC.	1	0	1	2	1	1	0	0	0	0	0	0	1	0	0	1	1	1

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	143	58	98	119	137	137	137	143	156	119	150	127	131	101	117	143	72	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	1	0	0	0	0	0	0	1	4	0	1	0	0	0	0	1	0 :	8
120. - 140. :	0	0	0	0	2	4	3	2	2	0	0	2	3	0	0	0	0 :	18
100. - 120. :	1	0	0	1	0	6	0	1	9	4	1	0	2	1	2	0	0 :	28
80. - 100. :	1	0	1	2	10	3	2	1	2	5	4	1	5	3	1	0	0 :	41
60. - 80. :	1	0	1	4	9	12	8	4	14	3	4	3	7	3	3	0	1 :	77
40. - 60. :	5	3	0	5	30	19	10	2	10	8	12	5	8	10	3	2	2 :	134
20. - 40. :	3	0	5	17	29	6	1	0	0	0	3	2	7	4	0	0	6 :	83
LT 20. :	2	1	6	44	79	35	3	2	0	2	7	4	11	3	3	2	5 :	209
TOTAL :	14	4	13	73	159	85	27	13	41	22	32	17	43	24	12	5	14	598
MEAN CONC.	54	43	30	20	29	43	63	79	87	68	49	53	51	51	59	54	29	44

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	47	1	7	9	3	11	15	11	5	3	9	5	3	1	18	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
30. - 40. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	1	0	0	0	0	1	2	1	0	0	0	0	0	0	2	0	0 :	7
LT 10. :	26	12	16	23	36	42	38	37	84	115	86	26	36	24	37	26	8 :	672
TOTAL :	29	12	16	23	36	43	40	38	84	115	86	26	36	24	39	26	8	681
MEAN CONC.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	45	1	5	3	3	11	15	7	5	0	9	5	3	1	18	5	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
30. - 40. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	1	0	0	0	0	1	2	0	0	0	0	0	0	0	2	0	0 :	6
LT 10. :	26	12	16	23	36	42	38	38	84	115	86	26	36	24	37	26	8 :	673
TOTAL :	29	12	16	23	36	43	40	38	84	115	86	26	36	24	39	26	8	681
MEAN CONC.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

II B-1134

(03/1[illegible]79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3	0	2	3	0	1	2	2	1	2	2	2	0	1	2	1	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	29	12	15	23	36	43	40	38	84	114	85	26	36	24	39	26	8 :	678
TOTAL :	29	12	15	23	36	43	40	38	84	114	85	26	36	24	39	26	8	678
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	113	117	115	109	119	117	117	127	129	145	137	133	127	127	137	129	98	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
120. - 140. :	0	0	0	0	0	0	0	2	10	22	29	3	5	1	4	2	0 :	78
100. - 120. :	15	7	4	1	11	10	13	15	28	39	32	8	8	9	20	10	0 :	230
80. - 100. :	11	5	9	11	19	25	25	19	29	38	19	12	20	8	11	9	4 :	274
60. - 80. :	3	0	2	9	6	7	2	1	14	9	4	3	3	3	2	2	4 :	74
40. - 60. :	0	0	1	2	0	1	0	1	3	4	1	0	0	2	2	3	0 :	20
20. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	29	12	16	23	36	43	40	38	84	114	85	26	36	23	39	26	8	678
MEAN CONC.	98	100	91	83	93	92	97	97	97	104	110	102	101	94	103	97	82	99

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3679	3449	3219	3909	4024	4024	4139	3794	3909	4254	3564	3564	3564	3909	4254	3679	919	
GT 4000. :	0	0	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0 :	5
3750. -4000. :	0	0	0	2	0	1	0	1	1	0	0	0	0	1	1	0	0 :	7
3500. -3750. :	1	0	0	0	0	0	1	2	1	1	3	1	2	1	3	2	0 :	18
3250. -3500. :	1	1	0	0	0	0	3	0	0	2	0	1	1	0	4	2	0 :	15
3000. -3250. :	1	1	2	0	1	1	2	2	3	1	3	0	5	0	1	1	0 :	24
2750. -3000. :	0	0	0	0	0	1	0	1	0	1	4	1	0	1	1	0	0 :	10
2500. -2750. :	0	0	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0 :	6
2250. -2500. :	0	1	0	1	3	0	0	1	0	1	2	2	0	0	1	1	0 :	13
2000. -2250. :	0	0	0	0	1	1	4	0	1	0	1	0	0	0	3	0	0 :	11
1750. -2000. :	0	0	0	2	6	2	1	2	3	2	8	0	1	0	2	3	0 :	32
1500. -1750. :	0	0	1	0	5	7	4	5	4	4	0	0	1	1	1	0	0 :	33
1250. -1500. :	2	0	0	0	0	2	3	0	3	8	5	1	2	0	2	1	0 :	29
1000. -1250. :	0	0	1	0	0	0	1	0	4	6	5	0	1	0	0	0	0 :	18
LT 1000. :	8	3	2	4	9	15	9	11	37	43	35	14	13	9	10	0	4 :	235
TOTAL :	13	6	6	9	26	31	29	26	59	70	66	20	28	14	30	19	4	456
MEAN CONC.	1149	1629	1590	1750	1556	1331	1748	1609	1112	1108	1318	1161	1568	1306	1954	1561	919	1386

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

TOTAL HYDROCARBONS (THC) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION	WIND DIRECTION																	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
MAX UG/M**3	4912	4584	2881	4322	4977	4977	4453	4191	3732	2881	4257	3208	4846	4715	4387	3077	1702	
GT 4000. :	2	1	0	1	1	4	1	1	0	0	1	0	3	2	2	0	0	: 19
3800. -4000. :	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	: 3
3600. -3800. :	0	0	0	1	0	0	0	0	1	0	0	0	1	1	2	0	0	: 6
3400. -3600. :	1	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	: 5
3200. -3400. :	1	0	0	0	0	1	0	0	1	0	1	1	0	0	1	0	0	: 6
3000. -3200. :	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	: 4
2800. -3000. :	0	0	1	0	0	2	0	0	0	1	0	1	0	0	0	3	0	: 8
2600. -2800. :	0	0	0	0	0	2	0	1	1	0	0	0	1	0	1	0	0	: 6
2400. -2600. :	2	0	1	0	1	0	1	3	1	2	0	0	1	0	0	2	0	: 14
2200. -2400. :	1	2	0	0	2	1	0	0	2	1	1	0	1	0	2	0	0	: 13
2000. -2200. :	1	1	0	0	0	1	1	2	4	5	6	1	1	2	4	2	0	: 31
1800. -2000. :	2	1	2	3	7	4	8	8	9	9	6	2	9	1	5	4	0	: 80
1600. -1800. :	0	1	0	1	2	1	3	1	3	7	10	4	7	3	3	0	1	: 47
LT 1600. :	8	3	6	5	17	16	19	10	37	46	35	12	7	6	15	9	3	: 254
TOTAL :	18	10	10	11	30	33	34	29	60	71	60	21	32	17	35	21	4	496
MEAN CONC.	2084	2102	1296	1744	1401	1958	1381	1998	1509	1424	1546	1515	2134	2241	1925	1811	1588	1687

0 = NO OBSERVATIONS

(03/1-'79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

METHANE (CH4) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	2161	2030	1898	1964	1964	2030	2030	1898	2095	2095	2095	1964	2030	2095	2226	2095	851	
GT 2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2400. -2600. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
2200. -2400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0 :	2
2000. -2200. :	1	1	0	0	0	1	1	0	1	2	3	0	1	2	3	1	0 :	17
1800. -2000. :	2	1	1	2	2	2	4	3	4	2	1	2	6	0	5	4	0 :	41
1600. -1800. :	0	0	1	0	0	0	2	1	0	2	6	1	1	1	1	0	0 :	16
1400. -1600. :	0	0	0	1	4	2	0	7	3	2	6	1	3	1	1	0	0 :	31
1200. -1400. :	0	1	0	0	1	0	1	1	0	0	1	1	1	0	1	1	0 :	9
1000. -1200. :	2	1	1	0	0	4	1	3	0	1	5	2	2	1	4	8	0 :	35
800. -1000. :	6	2	2	4	6	10	4	7	24	22	29	6	13	8	11	4	3 :	161
600. - 800. :	0	0	0	2	6	4	4	2	14	28	8	5	0	0	1	0	1 :	75
400. - 600. :	0	0	0	0	5	4	2	2	7	8	3	1	1	1	1	0	0 :	35
200. - 400. :	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	1	0 :	6
LT 200. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0 :	1
TOTAL :	11	6	5	9	24	27	19	26	55	67	65	20	28	14	30	19	4	429
MEAN CONC.	1274	1386	1322	1157	987	1028	1216	1211	941	906	1069	1041	1291	1188	1375	1258	834	1094

0 = NO OBSERVATIONS

II B-1139

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NON-METHANE HYDROCARBONS — C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	3799	3602	2881	3406	3995	3995	3471	3208	2750	2553	3274	2226	3863	3602	3405	2095	851	
GT 3000. :	2	1	0	1	1	4	1	1	0	0	1	0	3	3	2	0	0	: 20
2800. -3000. :	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	: 4
2600. -2800. :	0	0	0	0	0	1	0	0	1	0	0	0	1	1	2	0	0	: 6
2400. -2600. :	2	0	0	0	0	1	2	2	1	2	0	0	1	1	0	0	0	: 12
2200. -2400. :	1	2	0	0	2	2	0	0	2	0	1	1	0	0	1	0	0	: 12
2000. -2200. :	0	1	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	: 6
1800. -2000. :	0	0	0	0	1	2	2	1	0	1	1	1	0	0	0	2	0	: 11
1600. -1800. :	0	1	0	0	1	1	1	1	2	1	0	1	5	2	3	1	0	: 20
1400. -1600. :	2	0	1	0	0	0	0	2	1	1	0	0	0	0	2	2	0	: 11
1200. -1400. :	2	0	0	0	0	0	0	0	4	1	1	0	1	1	0	1	0	: 11
1000. -1200. :	2	0	0	0	0	0	1	1	0	5	1	0	0	0	0	0	0	: 10
800. -1000. :	0	0	0	2	2	2	2	0	5	6	4	2	2	1	0	1	1	: 30
600. - 800. :	0	0	0	0	2	4	4	0	14	17	7	2	3	1	0	0	3	: 57
LT 600. :	7	5	8	7	21	16	21	18	30	36	44	14	15	7	24	13	0	: 286
TOTAL :	18	10	10	11	30	33	34	29	60	71	60	21	32	17	35	21	4	496
MEAN CONC.	1306	1270	635	797	611	1117	701	912	686	618	471	552	1056	1298	746	673	753	768

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	10	2	10	10	10	10	5	10	15	10	10	10	7	10	5	5	10	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	2	0	2	6	2	2	0	1	13	24	6	1	0	1	0	0	2 :	62
LT 10. :	27	12	13	15	31	37	38	35	67	85	77	24	36	22	38	25	6 :	588
TOTAL :	29	12	15	21	33	39	38	36	80	109	83	25	36	23	38	25	8	650
MEAN CONC.	1	0	2	4	1	1	0	1	3	3	1	1	0	1	0	0	3	1

0 = NO OBSERVATIONS

(03/14/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) C-B SHALE OIL PROJECT

TRAILER NO. - AB23 PERIOD(7 /01/78 TO 7 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	30	12	16	21	33	39	38	36	81	110	83	25	36	24	38	25	8 :	655
TOTAL :	30	12	16	21	33	39	38	36	81	110	83	25	36	24	38	25	8	655
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(03/1[illegible]79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(8 /01/78 TO 8 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	5	7	5	0	0	0	3	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28 :	540
TOTAL :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28	540
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(8 /01/78 TO 8 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28 :	540
TOTAL :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28	540
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(8 /01/78 TO 8 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	2	3	2	0	0	0	2	0	0	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28 :	540
TOTAL :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28	540
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(8 /01/78 TO 8 /31/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	76	56	58	56	60	60	72	72	78	74	84	80	78	72	78	74	74	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0 :	3
60. - 80. :	2	0	0	0	3	1	11	4	15	12	22	3	11	11	9	3	9 :	116
40. - 60. :	3	2	3	3	22	32	28	5	20	11	26	4	7	5	16	5	8 :	200
20. - 40. :	4	0	0	1	58	65	20	2	1	0	0	0	0	3	2	0	6 :	162
LT 20. :	0	2	0	1	22	22	5	0	0	0	0	0	1	0	0	1	5 :	59
TOTAL :	9	4	3	5	105	120	64	11	36	23	50	8	19	19	27	9	28	540
MEAN CONC.	48	35	50	38	31	32	44	55	58	61	62	62	58	58	54	54	45	44

0 = NO OBSERVATIONS

II B-1146

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF N TROGEN (NOX) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(9 /01/78 TO 9 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	9	5	5	0	9	5	0	0	0	0	0	0	5	5	0	5	1	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19 :	696
TOTAL :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19	696
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(9 /01/78 TO 9 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19 :	696
TOTAL :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19	696
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RP1)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(9 /01/78 TO 9 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	6	3	3	0	6	3	0	0	0	0	0	0	3	3	0	3	1	
GT 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
110. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 110. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
90. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 90. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
70. - 80. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. - 70. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. - 60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. - 50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
10. - 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 10. :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19 :	696
TOTAL :	23	64	21	70	172	63	36	41	23	13	21	37	28	35	17	13	19	696
MEAN CONC.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(05/18/79-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (O3) C-B SHALE OIL PROJECT

TRAILER AB20 PERIOD(9 /01/78 TO 9 /30/78)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	50	52	62	64	64	70	70	74	70	86	84	68	90	68	60	64	66	
GT 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
240. - 260. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
220. - 240. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 220. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
180. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
160. - 180. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
140. - 160. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
120. - 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 120. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
80. - 100. :	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0 :	3
60. - 80. :	0	0	1	2	2	6	9	9	5	7	4	7	3	2	2	1	3 :	63
40. - 60. :	7	12	7	17	23	7	17	26	15	5	12	22	16	19	13	8	6 :	232
20. - 40. :	9	31	6	31	53	20	7	5	3	0	4	7	6	13	2	3	7 :	207
LT 20. :	6	19	5	20	94	28	3	1	0	0	0	1	1	0	0	0	1 :	179
TOTAL :	22	62	19	70	172	61	36	41	23	13	21	37	27	34	17	12	17	684
MEAN CONC.	28	26	34	30	24	27	48	52	54	62	54	49	47	43	50	45	42	36

0 = NO OBSERVATIONS

(05/18/79-RPI)

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50	3	2	1	5	2	8	8	2	7	5	5	2	3	2	3	2	60
40 - 50	1				1		1	1			2	1		2			9
30 - 40	1				2	1	3	2	1	2			1	1			14
20 - 30	1			2	5	10	10	4	6	4	3	7	2	2	5	1	62
10 - 20	14	2	4	7	8	7	9	16	25	51	24	9	6	13	19	18	232
< 10	88	56	45	44	64	79	102	111	168	261	171	78	66	88	88	84	1593
TOTAL	108	60	50	58	82	105	133	136	207	323	205	97	78	108	115	105	1970
PERCENT	6	3	2	3	4	5	7	7	11	16	10	5	4	6	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50	1	1	1	3	1	1	4	2	3	4	4	2	3	1		2	33
40 - 50		1			1		1	1		1	2	1					8
30 - 40	2			1	2	2	2	2	1	1				1	3		17
20 - 30	2			1	2	7	6	2	3	1		1		1		1	27
10 - 20	2	1	1	2	5	12	9	7	9	21	9	1	5	2	3	4	93
< 10	101	57	48	51	71	83	111	122	191	295	190	92	70	103	109	98	1792
TOTAL	108	60	50	58	82	105	133	136	207	323	205	97	78	108	115	105	1970
PERCENT	6	3	3	3	4	5	7	7	10	16	10	5	4	6	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180																	
100 - 140	9	6	1	1	1	4	2	5	5	15	6	2	1	5	4	3	70
60 - 100	73	38	34	28	56	69	87	68	127	197	104	46	45	77	87	82	1218
20 - 60	38	21	18	25	31	39	48	71	76	112	100	52	30	38	37	32	768
< 20				4	2		2	2	1	3	8	6	4	5	2	1	40
TOTAL	120	65	53	58	90	112	139	146	209	327	218	106	80	125	130	118	2096
PERCENT	6	3	2	3	4	5	7	7	10	16	10	5	4	6	6	6	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20	1	1	1	1	3	12	4	4	7	6	3			2	1	1	47
≤ 10	114	61	51	56	82	95	133	132	196	321	199	101	74	115	123	104	1957
TOTAL	115	62	52	57	85	107	137	136	203	327	202	101	74	117	124	105	2004
PERCENT	6	3	3	3	4	5	7	7	10	16	10	5	4	6	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20			1		1												2
< 10	105	57	49	49	74	104	120	122	182	289	201	93	72	97	118	104	1836
TOTAL	105	58	49	50	74	104	120	122	182	289	201	93	72	97	118	104	1838
PERCENT	6	3	3	3	4	6	6	6	10	16	11	5	4	5	6	6	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50	.	.	.	.	1	.	1	.	.	1	.	.	.	.	.	.	3
40 - 50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
30 - 40	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1
20 - 30	.	.	.	1	3	.	2	.	.	1	.	.	.	.	.	.	7
10 - 20	.	.	.	2	2	2	.	2	2	4	.	1	.	.	2	.	17
< 10	48	33	23	40	78	105	131	159	227	316	145	68	102	123	83	64	1745
TOTAL	48	33	23	43	85	107	134	161	229	322	145	69	102	123	85	64	1773
PERCENT	3	2	1	2	5	6	7	9	13	18	8	4	6	7	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50										1							1
40 - 50																	
30 - 40					1												1
20 - 30					2		2										4
10 - 20				3		2			1	3		1			1		11
< 10	48	33	23	40	82	105	132	161	228	318	145	68	102	123	84	64	1756
TOTAL	48	33	23	43	85	107	134	161	229	322	145	69	102	123	85	64	1773
PERCENT	3	2	1	2	5	6	7	9	13	18	8	4	6	7	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180																	
100 - 140																	
60 - 100	56	38	24	44	100	133	159	173	239	362	142	67	88	118	81	70	1894
20 - 60	2	1	3	7	12	13	10	9	18	20	18	16	27	30	10	18	214
< 20													1				1
TOTAL	58	39	27	51	112	146	169	182	257	382	160	83	116	148	91	88	2109
PERCENT	3	2	1	2	5	7	8	9	12	18	8	4	6	7	4	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000																	
1000 - 1500				1		1	1	1	2			1				1	8
< 1000	45	32	24	41	83	96	136	138	180	261	101	60	72	93	68	75	1505
TOTAL	45	32	24	42	83	97	137	139	182	261	101	61	72	93	68	76	1513
PERCENT	3	2	2	3	5	6	9	9	12	17	7	4	5	6	5	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20					1	4	7	9	4	1	16	2	1	3	5	9	62
< 10	57	37	26	51	106	139	160	178	262	350	155	81	111	139	86	78	2016
TOTAL	57	37	26	52	110	146	169	182	263	366	157	82	114	144	86	87	2078
PERCENT	3	2	1	2	5	7	8	9	13	18	8	4	5	7	4	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20							3	5	1	2	1						12
< 10	56	36	27	53	110	138	156	176	264	374	158	82	105	134	80	89	2038
TOTAL	56	36	27	53	110	141	161	177	266	375	158	82	105	134	80	89	2050
PERCENT	3	2	1	3	5	7	8	9	13	18	8	4	5	6	4	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																1	1
10 - 20	2			1	6	5	2	3	5	10	5	2	2	3	2	3	51
< 10	66	42	31	38	66	79	107	163	291	373	201	80	98	112	147	102	1996
TOTAL	68	42	31	39	72	84	109	166	296	383	206	82	100	115	149	106	2048
PERCENT	3	2	2	2	4	4	5	8	14	19	10	4	5	6	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20	1			1	4	2	1	1	3	5	4	2	2	2		1	29
< 10	67	42	31	38	68	82	108	165	293	378	202	80	98	113	149	105	2019
TOTAL	68	42	31	39	72	84	109	166	296	383	206	82	100	115	149	106	2048
PERCENT	3	2	2	2	4	4	5	8	14	19	10	4	5	6	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180																	
100 - 140	18	9	2	4	1	5	9	15	58	104	61	14	15	20	29	21	385
60 - 100	57	33	31	34	68	82	95	149	235	282	135	63	78	84	116	86	1628
20 - 60			1	3	4	3	8	7	8	20	16	6	9	11	4	2	102
< 20													1				1
TOTAL	75	42	34	41	73	90	112	171	301	406	212	83	103	115	149	109	2116
PERCENT	4	2	2	2	4	4	5	8	14	19	10	4	5	5	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000																	
1000 - 1500									1	1	1		1			1	5
< 1000	36	24	19	23	34	46	56	95	175	223	134	51	61	61	82	36	1156
TOTAL	36	24	19	23	34	46	56	95	176	224	135	51	62	61	82	37	1161
PERCENT	3	2	2	2	3	4	5	8	15	19	12	5	5	5	7	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20													1				1
< 10	73	42	32	41	73	91	113	171	302	408	214	85	108	118	149	108	2128
TOTAL	73	42	32	41	73	91	113	171	302	408	214	85	109	118	149	108	2129
PERCENT	3	2	2	2	3	4	6	8	14	19	10	4	5	6	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20																	
< 10	72	42	34	41	73	91	110	164	296	407	213	85	110	118	150	108	2114
TOTAL	72	42	34	41	73	91	110	164	296	407	213	85	110	118	150	108	2114
PERCENT	3	2	2	2	4	4	5	8	14	19	10	4	5	6	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50								1	1								2
40 - 50								1									1
30 - 40																	
20 - 30					1				1						1		3
10 - 20			1											2			3
< 10	35	25	18	37	44	70	62	88	123	248	161	63	34	56	58	51	1173
TOTAL	35	26	18	37	45	70	62	90	125	248	161	63	34	58	59	51	1182
PERCENT	3	2	1	3	4	6	5	8	11	21	14	5	3	5	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50								1	1								2
40 - 50								1									1
30 - 40																	
20 - 30					1										1		2
10 - 20									1					1			2
< 10	35	26	18	37	44	70	62	88	123	248	161	63	34	57	58	51	1175
TOTAL	35	26	18	37	45	70	62	90	125	248	161	63	34	58	59	51	1182
PERCENT	3	2	1	3	4	6	5	8	11	21	14	5	3	5	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180									2	4	14						20
100 - 140	18	9	4	7	10	12	13	22	50	123	70	33	12	25	32	33	473
60 - 100	28	27	18	36	45	64	65	87	100	204	124	50	28	39	47	34	996
20 - 60	2		1	3	3	3	6	8	5	9	12	7	3	5		2	69
< 20																	
TOTAL	48	36	23	46	58	79	84	117	157	340	220	90	43	69	79	69	1558
PERCENT	3	2	2	3	4	5	5	8	10	22	14	6	3	4	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000																	
1000 - 1500																	
< 1000	40	24	18	34	53	66	65	94	128	250	184	80	35	57	62	56	1246
TOTAL	40	24	18	34	53	66	65	94	128	250	184	80	35	57	62	56	1246
PERCENT	3	2	1	3	4	5	5	8	10	20	15	6	3	5	5	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20																	
< 10	50	36	22	45	56	81	83	121	159	329	212	87	40	69	79	69	1538
TOTAL	50	36	22	45	56	81	83	121	159	329	212	87	40	69	79	69	1538
PERCENT	3	2	1	3	4	5	5	8	10	21	14	6	3	5	5	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20	2	1			1						1				1		6
< 10	45	34	20	45	53	76	78	110	152	311	201	85	39	68	78	68	1463
TOTAL	47	35	20	45	54	76	78	110	152	311	202	85	39	68	79	68	1469
PERCENT	3	2	1	3	4	5	5	8	10	21	14	6	3	5	5	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20							1			1	1						3
< 10				3	4	8	10	13	13	15	12	5	4	2	1		90
TOTAL				3	4	8	11	13	13	16	13	5	4	2	1		93
PERCENT				3	4	9	12	14	14	17	14	6	4	2	1		100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 10/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
40 - 50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
30 - 40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
20 - 30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
10 - 20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
< 10	.	.	.	3	4	8	11	13	13	16	13	5	4	2	1	.	93
TOTAL	.	.	.	3	4	8	11	13	13	16	13	5	4	2	1	.	93
PERCENT	.	.	.	3	4	9	12	14	14	17	14	6	4	2	1	.	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180					1												1
100 - 140			1			2			1	3	12	4	2		1		26
60 - 100	3	5	4	9	25	50	83	94	85	133	121	41	28	30	40	20	771
20 - 60	1	5	6	12	24	38	30	58	73	135	38	41	30	40	30	5	566
< 20					1										2		3
TOTAL	4	10	11	21	51	90	113	152	159	271	171	86	60	70	73	25	1367
PERCENT	0	1	1	2	4	7	8	11	12	20	12	6	4	5	5	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 11/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000					1				1								2
1000 - 1500				1	2	2	4	4	4	6	4	3					30
< 1000		2	1	1	12	24	33	24	32	35	38	11	8	20	12	3	256
TOTAL		2	1	2	15	26	37	28	37	41	42	14	8	20	12	3	288
PERCENT		1	0	1	5	9	13	10	13	14	14	5	3	7	4	1	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20														1			1
< 10	3	9	12	21	51	91	114	154	160	284	178	88	61	70	69	25	1390
TOTAL	3	9	12	21	51	91	114	154	160	284	178	88	61	71	69	25	1391
PERCENT	0	1	1	2	4	6	8	11	12	20	13	6	4	5	5	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30					1	1			1		1				1		5
10 - 20					1	1	1	1	3	3	1		2	2	2		17
< 10	3	10	11	21	50	90	114	153	157	285	177	91	63	69	66	24	1384
TOTAL	3	10	11	21	52	92	115	154	161	288	179	91	65	71	69	24	1406
PERCENT	0	1	1	1	4	6	8	11	12	20	13	6	5	5	5	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (12/1/77 to 2/28/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180																	
100 - 140	15	6	2	2	7	6	15	5	20	54	33	3	13	4	12	12	209
60 - 100	11	7	5	7	22	36	72	75	99	102	64	11	18	38	32	11	610
20 - 60	2	3	1	2	13	8	27	16	30	62	44	19	21	19	10	9	286
< 20											2						2
TOTAL	28	16	8	11	42	50	114	96	149	218	143	33	52	61	54	32	1107
PERCENT	2	1	1	1	4	4	10	9	14	20	13	3	5	5	5	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (12/1/77 to 2/28/78)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20	3	1	1	2	3	7	13	6	7	7	6	1	2		3		62
< 10	25	16	7	9	39	43	104	90	143	213	138	32	50	61	51	32	1053
TOTAL	28	17	8	11	42	50	117	96	150	220	144	33	52	61	54	32	1115
PERCENT	2	1	1	1	4	4	11	9	13	20	13	3	5	5	5	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (12/1/77 to 2/28/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20																	
< 10	28	17	8	11	43	56	120	97	155	221	144	28	37	47	51	32	1095
TOTAL	28	17	8	11	43	56	120	97	155	221	144	28	37	47	51	32	1095
PERCENT	3	1	1	1	4	5	11	9	14	20	13	3	3	4	5	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/30/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30														1		1	2
10 - 20															3	1	4
< 10	47	19	17	15	20	49	89	74	195	195	130	64	41	57	59	42	1113
TOTAL	47	19	17	15	20	49	89	74	195	195	130	64	41	58	62	44	1119
PERCENT	4	2	1	1	2	4	8	7	17	17	12	6	4	5	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/31/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30														1		1	2
10 - 20															2		2
≤ 10	46	18	17	15	20	49	88	74	195	195	130	64	41	57	60	43	1112
TOTAL	46	18	17	15	20	49	88	74	195	195	130	64	41	58	62	44	1116
PERCENT	4	2	1	1	2	4	8	7	17	17	12	6	4	5	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/30/78)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180																	
140 - 180									2	4							6
100 - 140	11	3	1	1	4	8	20	10	52	62	45	19	11	16	30	11	304
60 - 100	45	21	19	15	20	45	64	63	146	148	83	40	25	48	38	35	855
20 - 60	2			1	1		3	3	10	4	9	8	9	3		3	56
< 20																	
TOTAL	58	24	20	17	25	53	87	76	210	218	137	67	45	67	68	49	1221
PERCENT	5	2	2	2	2	4	7	6	17	18	11	5	4	5	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/30/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000																	
1000 - 1500																	
< 1000	40	19	16	13	15	28	58	49	147	132	90	45	32	45	34	29	792
TOTAL	40	19	16	13	15	28	58	49	147	132	90	45	32	45	34	29	792
PERCENT	5	2	2	2	2	3	7	6	19	17	11	6	4	6	4	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/30/78)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30				1					3					1			5
10 - 20	1	1	2	2	3	2	4	4	11		1	5		1	5	4	46
≤ 10	57	23	18	14	21	51	90	74	204	216	140	61	44	66	63	47	1189
TOTAL	58	24	20	17	24	53	94	78	218	216	141	66	44	68	68	51	1240
PERCENT	5	2	2	1	2	4	8	6	18	17	11	5	3	6	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (3/1/78 to 4/31/78)

STATION AB23 LEVEL 10 M

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40						1								1			2
20 - 30							1		3							1	5
10 - 20								1	4	2	2						9
< 10	55	23	17	16	25	52	94	75	209	210	138	66	45	68	67	47	1207
TOTAL	55	23	17	16	25	53	95	76	216	212	140	66	45	69	67	48	1223
PERCENT	5	2	1	1	2	4	8	6	18	17	11	5	4	6	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (12/01/78 to 2/28/79)

STATION AB20 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50							1							1			2
30 - 40						4	7	3		1	1			2	1		19
20 - 30					1	1	3	3		0	0			1	2		11
10 - 20				1	0	4	2	2		0	0			0	0		9
< 10	19	30	24	56	374	436	228	53	60	30	29	21	83	188	100	21	1812
TOTAL	19	30	25	57	383	448	297	53	61	31	29	21	83	192	103	21	1853
PERCENT	1	2	1	3	21	24	16	3	3	2	2	1	4	10	6	1	100.0

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW TOTAL

FREQUENCY TABLE OF NO_X CONCENTRATIONS BY DIRECTION

PERIOD (12/1/78 to 2/28/79

STATION AB23 LEVEL 10 m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30			1														1
10 - 20			0		2												2
< 10	24	13	9	10	26	37	39	41	58	147	89	22	27	42	60	32	676
TOTAL	24	13	10	10	28	37	39	41	58	147	89	22	27	42	60	32	679
PERCENT	4	2	1	1	4	5	6	6	9	22	13	3	4	6	9	5	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (12/01/78 to 2/28/79)

STATION AB20 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40							1							1			2
20 - 30					4	5	3		1	1				2	1		17
10 - 20			1	1	4	5	4		0	0				1	1		17
≤ 10	19	30	24	56	375	438	289	53	60	30	29	21	83	188	101	21	1817
TOTAL	19	30	25	57	383	448	297	53	61	31	29	21	83	192	103	21	1853
PERCENT	1	2	1	3	21	24	16	3	3	2	2	1	4	10	6	1	100.0

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF NO_2 CONCENTRATIONS BY DIRECTION

PERIOD (12/01/78 to 2/28/79)

STATION AB23 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40				1													1
20 - 30			1	0													1
10 - 20			0	0	2		2		2	1							7
< 10	60	47	48	55	98	129	112	147	203	442	226	75	81	124	118	84	2049
TOTAL	60	47	49	56	100	129	114	147	205	443	226	75	81	124	118	84	2058
PERCENT	3.	2.	2.	3.	5.	6.	5.	7.	10.	22.	11.	4.	4.	6.	6.	4.	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (12/1/78 to 2/28/79)

STATION AB20 LEVEL 10m

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180											1		1				2
140 - 180					1				1	2	4			1			9
100 - 140		1	1	1	5	10	2	5	5	8	2	2	1	5	3		51
60 - 100	10	10	7	22	167	171	157	26	38	16	7	11	29	92	43	11	817
20 - 60	11	19	20	34	212	284	147	27	22	7	17	7	50	91	46	12	1006
< 20	0	0	1	2	10	11	6	1	0	0	0	1	3	3	5	1	44
TOTAL	21	30	29	59	395	476	312	59	66	33	31	21	84	192	97	24	1929
PERCENT	1	2	1	3	21	25	16	3	3	2	2	1	4	10	5	1	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF OZONE CONCENTRATIONS BY DIRECTION

PERIOD (12/01/78 to 02/28/79)

STATION AB23 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 180									2								2
140 - 180						1	1		0								2
100 - 140			3			2	3	3	6	12	6	1			2		38
60 - 100	61	45	52	57	100	126	106	139	192	429	220	73	78	122	114	77	1991
20 - 60	0	0	0	0	0	0	4	6	6	3	1	1	3	2	3	7	36
< 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	61	48	52	57	100	129	114	148	206	444	227	75	81	124	119	84	2069
PERCENT	3	2	3	3	5	6	5	7	10	21	11	4	4	6	6	4	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (12/1/78 to 2/28/79)

STATION AB20 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000																	
1000 - 1500																	
< 1000	21	29	29	60	408	481	311	59	66	32	31	21	90	199	105	24	1966
TOTAL	21	29	29	60	408	481	311	59	66	32	31	21	90	199	105	24	1966
PERCENT	1	1	1	3	21	25	16	3	3	2	2	1	5	10	5	1	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF CO CONCENTRATIONS BY DIRECTION

PERIOD (12/01/78 to 02/28/79)

STATION AB23 LEVEL 10m

WIND DIRECTION

CONC. INTERVAL ($\mu g/m^3$)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 3000																	
2500 - 3000																	
2000 - 2500																	
1500 - 2000	1			1													2
1000 - 1500	0	1		0													1
< 1000	61	46	51	56	100	129	113	148	206	446	225	75	81	122	115	82	2056
TOTAL	62	47	51	57	100	129	113	148	206	446	225	75	81	122	115	82	2059
PERCENT	3	2	2	3	5	6	5	7	10	22	11	4	4	6	6	4	100.0

N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW TOTAL

FREQUENCY TABLE OF SO_2 CONCENTRATIONS BY DIRECTION

PERIOD 12/01/78 to 2/28/79)

STATION AB23 LEVEL 10m

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20										1		1			1		3
< 10	61	47	50	57	100	126	113	147	205	439	225	75	81	124	116	84	2050
TOTAL	61	47	50	57	100	126	113	147	205	440	225	76	81	124	117	84	2053
PERCENT	3	2	2	3	5	6	6	7	10	21	11	4	4	6	6	4	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF H_2S CONCENTRATIONS BY DIRECTION

PERIOD (12/1/78 to 2/28/79)

STATION AB23 LEVEL 10m

CONC. INTERVAL ($\mu g/m^3$)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 50																	
40 - 50																	
30 - 40																	
20 - 30																	
10 - 20										1							1
< 10	61	47	50	57	100	127	113	147	205	439	225	76	81	123	117	84	2052
TOTAL	61	47	50	57	100	127	113	147	205	440	225	76	81	123	117	84	2053
PERCENT	3	2	2	3	5	6	6	7	10	21	11	4	4	6	6	4	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB20 PERIOD(9 /01/76 TO 9 /30/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		2	2	3	3	5	5	5	4	4	4	4	3	4	5	2	3	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	2	1	2	0	0	0	0	0	0	1	0	0	0 :	6
3. -	5. :	0	0	1	1	11	16	6	9	19	9	3	3	17	11	0	5	0 :	111
1. -	3. :	9	6	7	19	205	101	6	1	9	11	7	15	41	24	17	11	0 :	489
LT	1. :	7	7	18	35	20	2	0	0	0	0	0	1	1	0	8	4	0 :	103
TOTAL	:	16	13	26	55	238	120	14	10	28	20	10	19	59	36	25	20	0	709
PERCENT		2.	2.	4.	8.	34.	17.	2.	1.	4.	3.	1.	3.	8.	5.	4.	3.	0.	100.

0 = NO OBSERVATIONS

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(02/28/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION 23 PERIOD(9 /01/76 TO 9 /30/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	3	2	4	5	4	4	6	8	8	9	4	3	5	5	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0 :	5
5. -	8. :	5	0	0	0	1	0	0	7	16	27	8	0	0	1	2	0	0 :	67
3. -	5. :	9	1	0	1	4	5	6	10	22	26	10	4	1	3	18	10	0 :	130
1. -	3. :	28	14	7	12	15	33	35	31	30	38	45	23	17	15	13	19	0 :	375
LT	1. :	2	0	6	7	8	5	16	19	17	12	12	11	6	4	3	3	0 :	131
TOTAL	:	44	15	13	20	28	43	57	67	87	105	76	38	24	23	36	32	0	708
PERCENT		6.	2.	2.	3.	4.	6.	8.	9.	12.	15.	11.	5.	3.	3.	5.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION 23 PERIOD(9 /01/76 TO 9 /30/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		6	3	2	2	6	5	4	7	10	10	10	5	4	4	6	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	6	15	2	0	0	0	0	0	0 :	23
5. -	8. :	9	0	0	0	2	2	0	10	23	27	15	2	0	0	3	2	0 :	95
3. -	5. :	18	2	0	0	4	5	16	10	13	22	12	7	5	4	15	16	0 :	149
1. -	3. :	19	20	10	14	14	36	42	23	17	17	13	17	29	18	10	14	0 :	313
LT	1. :	3	9	2	4	5	11	7	12	10	14	6	11	7	8	6	8	0 :	123
TOTAL	:	49	31	12	18	25	54	65	55	69	95	48	37	41	30	34	40	0	703
PERCENT		7.	4.	2.	3.	4.	8.	9.	8.	10.	14.	7.	5.	6.	4.	5.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(9/01/76 TO 9/22/76)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
WIND DIRECTION		0	7	8	2	7	2	6	7	8	8	4	0	2	1	0	0	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	3	0	0	0	0	0	10	11	0	0	0	0	0	0	0 :	24
5. -	8. :	0	2	3	0	1	0	1	3	10	12	0	0	0	0	0	0	0 :	32
3. -	5. :	0	2	6	0	0	0	1	3	15	16	1	0	0	0	0	0	0 :	44
1. -	3. :	0	14	33	15	7	13	51	49	51	43	14	0	1	4	0	0	0 :	295
LT	1. :	0	5	8	5	2	3	10	16	22	19	13	7	4	1	0	3	0 :	118
TOTAL	:	0	23	53	20	10	16	63	71	108	101	28	7	5	5	0	3	0	513
PERCENT		0.	4.	10.	4.	2.	3.	12.	14.	21.	20.	5.	1.	1.	1.	0.	0.	0.	99.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB20 PERIOD(10/01/76 TO 10/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	3	1	2	3	4	4	4	4	4	6	5	6	6	4	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	0	0	0	3	1	3	2	0	0	0 :	9
3. -	5. :	1	1	0	0	3	20	5	3	11	4	2	9	29	16	10	2	0 :	116
1. -	3. :	7	8	5	7	243	82	13	4	1	1	2	5	43	25	27	10	0 :	483
LT	1. :	5	6	9	32	22	3	1	1	0	0	1	0	1	0	0	3	0 :	84
TOTAL	:	13	15	14	39	268	105	19	8	12	5	8	15	76	43	37	15	0	692
PERCENT		2.	2.	2.	6.	39.	15.	3.	1.	2.	1.	1.	2.	11.	6.	5.	2.	0.	100.

0 = NO OBSERVATIONS

(02/28/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION 23 PERIOD(10/01/76 TO 10/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	6	3	2	2	2	3	4	7	8	10	7	7	7	7	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	2	0	0	0	0	0	0	0	0	3	5	0	0	0	0	0	0 :	10
5. -	8. :	4	3	0	0	0	0	0	0	4	31	4	1	2	6	2	4	0 :	61
3. -	5. :	7	2	1	0	0	0	2	3	8	21	3	0	1	16	16	20	0 :	100
1. -	3. :	21	16	8	16	14	15	15	19	32	49	53	22	14	31	31	23	0 :	379
LT	1. :	4	3	8	6	13	11	17	19	22	29	21	10	8	8	3	0	0 :	182
TOTAL	:	38	24	17	22	27	26	34	41	66	133	86	33	25	61	52	47	0	732
PERCENT		5.	3.	2.	3.	4.	4.	5.	6.	9.	18.	12.	5.	3.	8.	7.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION 23 PERIOD(10/01/76 TO 10/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		10	7	4	3	3	3	4	4	9	10	12	11	8	9	9	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0 :	2
8. -	11. :	3	0	0	0	0	0	0	0	2	11	3	2	1	1	1	0	0 :	24
5. -	8. :	6	4	0	0	0	0	0	0	4	42	8	0	1	7	6	9	0 :	37
3. -	5. :	16	4	3	2	1	1	7	4	11	16	7	3	2	6	32	24	0 :	139
1. -	3. :	23	16	15	6	6	19	12	18	25	21	15	27	22	26	28	13	0 :	292
LT	1. :	5	12	11	19	13	12	13	17	11	8	9	14	18	11	10	8	0 :	191
TOTAL	:	53	36	29	27	20	32	32	39	53	98	43	47	44	51	77	54	0	735
PERCENT		7.	5.	4.	4.	3.	4.	4.	5.	7.	13.	6.	6.	6.	7.	10.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(10/01/76 TO 10/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	4	4	2	3	2	2	4	4	4	4	2	2	3	4	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. -	5. :	16	21	3	0	1	0	0	6	19	25	2	0	0	2	6	14	0 :	115
1. -	3. :	25	32	6	1	1	13	47	44	46	45	16	9	7	17	31	31	0 :	371
LT	1. :	16	21	6	6	5	8	33	35	32	24	7	3	8	9	13	15	0 :	241
TOTAL	:	57	74	15	7	7	21	80	85	97	94	25	12	15	28	50	60	0	727
PERCENT		8.	10.	2.	1.	1.	3.	11.	12.	13.	13.	3.	2.	2.	4.	7.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(11/01/76 TO 11/30/76)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	2	2	1	2	2	2	2	4	6	7	6	5	6	6	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	4	0	0	0	0	0	0	0	0	12	7	2	1	1	5	7	0 :	39
3. -	5. :	11	0	0	0	0	0	0	0	7	32	4	1	0	7	11	12	0 :	85
1. -	3. :	21	22	14	11	23	31	28	17	25	40	30	23	23	29	22	14	0 :	373
LT	1. :	3	5	11	8	12	14	23	22	33	26	16	10	8	6	7	7	0 :	211
TOTAL	:	39	27	25	19	35	45	51	39	65	110	57	36	32	43	45	40	0	709
PERCENT		6.	4.	4.	3.	5.	6.	7.	6.	9.	16.	8.	5.	5.	6.	6.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(11/01/76 TO 11/30/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		7	3	2	2	1	2	3	2	6	8	9	8	5	4	7	7	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	2	4	1	0	0	0	0	0 :	7
5. -	8. :	9	0	0	0	0	0	0	0	2	21	8	3	1	0	7	14	0 :	65
3. -	5. :	16	4	0	0	0	0	1	0	3	27	8	3	2	9	15	13	0 :	101
1. -	3. :	23	21	16	12	13	32	35	23	15	20	14	18	25	28	21	20	0 :	336
LT	1. :	11	11	12	12	15	21	16	13	19	18	17	9	11	7	7	6	0 :	205
TOTAL	:	59	36	28	24	28	53	52	36	39	88	51	34	39	44	50	53	0	714
PERCENT		8.	5.	4.	3.	4.	7.	7.	5.	5.	12.	7.	5.	5.	6.	7.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(11/01/76 TO 11/30/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	6	2	1	0	2	2	2	3	3	3	2	2	2	3	4	0	
GT 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 0
8. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 0
5. - 8.	:	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 2
3. - 5.	:	25	5	0	0	0	0	0	0	4	1	1	0	0	0	2	12	0	: 50
1. - 3.	:	31	15	6	1	0	14	58	66	54	36	11	3	5	8	23	58	0	: 389
LT 1.	:	8	10	4	3	7	16	39	33	46	26	11	8	16	11	21	20	0	: 279
TOTAL	:	65	31	10	4	7	30	97	99	104	63	23	11	21	19	46	90	0	720
PERCENT		9.	4.	1.	1.	1.	4.	13.	14.	14.	9.	3.	2.	3.	3.	6.	13.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(12/01/76 TO 12/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		6	4	2	2	2	2	3	5	10	8	7	2	2	10	6	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	3	1	0	0	0	2	0	0	0 :	6
5. -	8. :	2	0	0	0	0	0	0	1	12	24	7	0	0	1	2	1	0 :	50
3. -	5. :	2	2	0	0	0	0	2	6	18	44	3	0	0	11	8	10	0 :	106
1. -	3. :	11	8	7	14	32	42	41	40	36	49	32	22	25	24	17	13	0 :	413
LT	1. :	2	1	4	6	11	7	23	16	32	22	9	10	11	5	3	2	0 :	164
TOTAL	:	17	11	11	20	43	49	66	63	101	140	51	32	36	43	30	26	0	739
PERCENT		2.	1.	1.	3.	6.	7.	9.	9.	14.	19.	7.	4.	5.	6.	4.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL — C-B SHALE OIL PROJECT

STATION AB23 PERIOD(12/01/76 TO 12/31/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		6	7	1	2	2	3	3	5	13	9	8	3	3	11	7	6	0	
GT 11.	:	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	: 3
8. - 11.	:	0	0	0	0	0	0	0	0	1	3	4	0	0	1	0	0	0	: 9
5. - 8.	:	2	3	0	0	0	0	0	1	12	47	13	0	0	1	1	6	0	: 86
3. - 5.	:	5	0	0	0	0	1	5	9	17	36	10	1	3	9	15	8	0	: 119
1. - 3.	:	20	8	8	5	10	32	46	45	40	22	15	16	19	32	18	12	0	: 348
LT 1.	:	6	10	11	7	15	16	14	13	25	12	10	8	9	12	1	4	0	: 173
TOTAL	:	33	21	19	12	25	49	65	68	97	120	52	25	31	56	35	30	0	738
PERCENT		4.	3.	3.	2.	3.	7.	9.	9.	13.	16.	7.	3.	4.	8.	5.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(12/01/76 TO 12/29/76)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		12	6	8	4	5	2	3	3	4	8	5	1	3	2	3	4	0	
GT	11. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
8. -	11. :	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	3
5. -	8. :	5	2	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0 :	11
3. -	5. :	16	6	5	7	0	0	1	5	28	17	1	0	1	0	1	9	0 :	97
1. -	3. :	32	25	9	11	8	12	98	114	54	23	5	2	1	3	7	12	0 :	416
LT	1. :	5	12	10	2	5	4	21	26	15	13	2	4	2	4	2	3	0 :	130
TOTAL	:	59	45	25	20	14	16	120	145	97	57	9	6	4	7	10	24	0	658
PERCENT		9.	7.	4.	3.	2.	2.	18.	22.	15.	9.	1.	1.	1.	1.	2.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(1 /01/77 TO 1 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	1	2	1	2	2	3	5	8	7	5	3	4	4	4	3	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0 :	4
5. -	8. :	0	0	0	0	0	0	0	3	22	53	3	0	0	0	0	0	0 :	81
3. -	5. :	2	0	0	0	0	0	1	9	22	36	9	2	6	6	4	1	0 :	98
1. -	3. :	9	12	4	13	31	63	55	46	45	46	19	16	17	22	7	15	0 :	420
LT	1. :	3	3	1	4	14	13	15	16	14	12	9	4	9	2	4	12	0 :	135
TOTAL	:	14	15	5	17	45	76	71	74	107	147	40	22	32	30	15	28	0	738
PERCENT		2.	2.	1.	2.	6.	10.	10.	10.	14.	20.	5.	3.	4.	4.	2.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL — C-B SHALE OIL PROJECT

STATION AB23 PERIOD(1 /01/77 TO 1 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	2	2	2	2	3	3	7	10	10	9	3	5	5	5	2	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	7	23	2	0	0	0	0	0	0 :	32
5. -	8. :	1	0	0	0	0	0	0	7	23	51	7	0	1	1	2	0	0 :	93
3. -	5. :	3	0	0	0	0	2	5	12	25	29	16	2	5	8	7	0	0 :	114
1. -	3. :	6	14	8	8	21	47	62	56	47	24	20	13	15	23	11	9	0 :	384
LT	1. :	11	8	6	3	8	10	13	11	9	8	6	8	4	1	5	4	0 :	115
TOTAL	:	21	22	14	11	29	59	80	86	111	135	51	23	25	33	25	13	0	768
PERCENT		3.	3.	2.	1.	4.	8.	11.	12.	15.	18.	7.	3.	3.	4.	3.	2.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(1/01/77 TO 1/31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	3	3	0	0	2	3	8	8	8	4	2	2	2	1	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	1	1	4	0	0	0	0	0	0	0 :	6
5. -	8. :	0	0	0	0	0	0	0	1	2	10	0	0	0	0	0	0	0 :	13
3. -	5. :	3	2	1	0	0	0	1	14	32	49	4	0	0	0	0	11	0 :	117
1. -	3. :	10	13	4	0	0	19	103	123	75	37	18	5	4	14	5	35	0 :	465
LT	1. :	9	9	4	2	9	2	7	16	12	14	5	4	9	11	12	17	0 :	142
TOTAL	:	22	24	9	2	9	21	111	155	122	114	27	9	13	25	17	63	0	743
PERCENT		3.	3.	1.	0.	1.	3.	15.	21.	16.	15.	4.	1.	2.	3.	2.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(2 /01/77 TO 2 /28/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		7	4	4	2	2	2	2	4	11	9	8	6	6	5	4	7	0	
GT	11. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
8. -	11. :	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0 :	3
5. -	8. :	8	0	0	0	0	0	0	0	2	11	5	1	4	4	0	5	0 :	40
3. -	5. :	4	3	1	0	0	0	0	3	6	18	15	3	14	22	26	8	0 :	123
1. -	3. :	10	7	9	10	17	17	23	24	33	45	38	17	27	47	19	18	0 :	361
LT	1. :	7	3	2	7	8	6	11	21	20	21	12	9	3	5	3	4	0 :	142
TOTAL	:	29	13	12	17	25	23	34	48	63	96	71	30	48	78	48	35	0	670
PERCENT		4.	2.	2.	3.	4.	3.	5.	7.	9.	14.	11.	4.	7.	12.	7.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(2 /01/77 TO 2 /28/77)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	5	5	2	2	3	3	3	8	13	10	5	7	6	5	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
8. -	11. :	3	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0 :	7
5. -	8. :	10	2	1	0	0	0	0	0	4	20	10	4	10	6	5	5	0 :	77
3. -	5. :	9	3	3	0	0	2	6	1	12	22	16	1	10	21	33	16	0 :	155
1. -	3. :	14	7	6	9	9	17	29	18	19	17	21	24	21	39	21	19	0 :	290
LT	1. :	7	5	11	7	10	6	13	7	13	13	7	10	9	9	3	8	0 :	138
TOTAL	:	43	17	21	16	19	25	48	26	49	75	56	39	50	75	62	48	0	669
PERCENT		6.	3.	3.	2.	3.	4.	7.	4.	7.	11.	8.	6.	7.	11.	9.	7.	0.	100.

WIND DIRECTION

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(2/01/77 TO 2/23/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	5	3	2	0	1	19	4	5	5	5	2	2	3	3	4	0	
GT 11.	:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	: 1
8. - 11.	:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	: 1
5. - 8.	:	0	3	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	: 7
3. - 5.	:	16	8	1	0	0	0	0	1	4	8	5	0	0	1	2	8	0	: 54
1. - 3.	:	35	24	4	2	0	8	39	67	40	21	23	8	8	10	20	34	0	: 343
LT 1.	:	9	3	2	2	8	6	9	6	12	3	0	4	3	8	9	4	0	: 88
TOTAL	:	61	38	7	4	8	14	49	74	57	33	30	12	11	19	31	46	0	494
PERCENT		12.	8.	1.	1.	2.	3.	10.	15.	12.	7.	6.	2.	2.	4.	6.	9.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(3 /01/77 TO 3 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	5	3	2	3	4	6	7	11	11	9	6	6	7	8	11	0	
GT	11. :	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0 :	5
8. -	11. :	1	0	0	0	0	0	0	0	16	25	5	0	0	0	1	5	0 :	53
5. -	8. :	9	1	0	0	0	0	1	3	17	38	22	6	14	5	5	19	0 :	140
3. -	5. :	2	4	1	0	1	4	4	18	28	31	9	4	11	16	9	10	0 :	152
1. -	3. :	12	5	6	5	21	26	21	19	31	34	20	10	20	21	25	8	0 :	284
LT	1. :	4	5	1	5	7	4	4	10	9	9	5	5	4	2	0	0	0 :	74
TOTAL	:	28	15	8	10	29	34	30	50	103	139	61	25	49	44	40	43	0	708
PERCENT		4.	2.	1.	1.	4.	5.	4.	7.	15.	20.	9.	4.	7.	6.	6.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(3 /01/77 TO 3 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		9	8	4	2	5	5	7	8	12	13	11	7	8	8	9	13	0	
GT	11. :	0	0	0	0	0	0	0	0	5	12	1	0	0	0	0	4	0 :	22
8. -	11. :	6	1	0	0	0	0	0	1	11	37	20	0	1	1	1	8	0 :	87
5. -	8. :	13	2	0	0	1	1	2	7	25	38	16	10	16	10	5	10	0 :	156
3. -	5. :	1	3	4	0	4	4	9	23	13	24	10	7	10	9	14	12	0 :	147
1. -	3. :	6	9	2	3	9	17	22	23	16	19	13	9	19	28	20	21	0 :	236
LT	1. :	2	9	3	2	3	4	6	10	5	5	3	10	6	3	6	1	0 :	78
TOTAL	:	28	24	9	5	17	26	39	64	75	135	63	36	52	51	46	56	0	726
PERCENT		4.	3.	1.	1.	2.	4.	5.	9.	10.	19.	9.	5.	7.	7.	6.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(3/01/77 TO 3/16/77)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	12	13	12	3	1	0	4	4	4	6	12	7	9	12	7	4	0	
GT 11. :	1	3	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0 :	8
8. - 11. :	1	5	2	0	0	0	0	0	0	0	2	0	1	0	0	0	0 :	11
5. - 8. :	2	6	5	0	0	0	0	0	0	4	7	4	1	0	6	0	0 :	35
3. - 5. :	1	8	1	1	0	0	2	3	8	19	6	4	0	0	2	2	0 :	57
1. - 3. :	8	9	5	0	1	0	6	32	30	13	13	4	1	2	3	11	0 :	138
LT 1. :	8	6	0	2	1	0	2	2	3	2	6	0	5	0	0	3	0 :	40
TOTAL :	21	37	15	3	2	0	10	37	41	38	35	12	8	3	11	16	0	289
PERCENT	7.	13.	5.	1.	1.	0.	3.	13.	14.	13.	12.	4.	3.	1.	4.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(4 /01/77 TO 4 /30/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		7	5	5	4	2	4	5	6	9	10	8	6	8	7	8	8	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	4	5	1	0	1	0	1	1	0 :	13
5. -	8. :	9	2	1	0	0	0	2	4	11	28	11	3	1	3	9	6	0 :	90
3. -	5. :	7	3	1	3	0	2	8	11	15	19	13	9	8	13	28	15	0 :	155
1. -	3. :	14	9	9	8	28	36	26	30	27	37	33	18	29	29	29	14	0 :	376
LT	1. :	1	1	6	4	6	2	7	13	8	8	4	2	5	6	4	4	0 :	81
TOTAL	:	31	15	17	15	34	40	43	58	65	97	62	32	44	51	71	40	0	715
PERCENT		4.	2.	2.	2.	5.	6.	6.	8.	9.	14.	9.	4.	6.	7.	10.	6.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(4 /01/77 TO 4 /30/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	5	7	5	2	5	6	7	10	11	10	7	9	8	10	9	0	
GT	11. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
8. -	11. :	2	0	0	0	0	0	0	0	9	13	3	0	1	3	2	2	0 :	35
5. -	8. :	12	2	2	1	0	1	7	7	14	22	14	4	2	0	12	9	0 :	109
3. -	5. :	10	4	3	3	0	6	8	18	15	21	12	13	9	13	29	22	0 :	186
1. -	3. :	14	11	3	7	15	38	32	16	16	6	8	20	22	29	24	17	0 :	278
LT	1. :	8	5	8	9	6	5	6	8	9	7	5	2	5	6	11	6	0 :	106
TOTAL	:	46	22	16	20	21	50	53	49	63	70	42	39	39	51	78	56	0	715
PERCENT		6.	3.	2.	3.	3.	7.	7.	7.	9.	10.	6.	5.	5.	7.	11.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(4/01/77 TO 4/20/77)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	6	5	5	4	2	4	4	4	4	4	4	3	5	1	5	8	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0 :	1
5. - 8. :	1	2	2	0	0	0	0	0	0	0	0	0	1	0	1	3	0 :	10
3. - 5. :	9	15	4	4	0	3	8	7	5	13	6	1	2	0	8	6	0 :	91
1. - 3. :	10	16	16	5	5	20	26	21	31	16	13	2	3	5	10	14	0 :	213
LT 1. :	5	9	7	2	1	5	11	10	9	11	3	0	2	3	2	7	0 :	87
TOTAL :	25	42	29	11	6	28	45	38	45	40	22	3	8	8	21	31	0	402
PERCENT	6.	10.	7.	3.	1.	7.	11.	9.	11.	10.	5.	1.	2.	2.	5.	8.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(5 /01/77 TO 5 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	4	3	3	2	5	7	8	14	12	9	6	8	6	7	7	0	
GT	11. :	0	0	0	0	0	0	0	0	8	7	0	0	0	0	0	0	0 :	15
8. -	11. :	0	0	0	0	0	0	0	1	30	51	8	0	1	0	0	0	0 :	91
5. -	8. :	0	0	0	0	0	1	5	19	30	62	33	5	3	11	10	2	0 :	181
3. -	5. :	8	3	1	2	0	1	10	21	25	22	11	8	4	3	22	14	0 :	155
1. -	3. :	7	7	8	10	7	6	21	20	38	26	33	11	7	6	8	12	0 :	227
LT	1. :	2	2	0	4	3	9	4	4	4	6	6	4	3	3	1	0	0 :	55
TOTAL	:	17	12	9	16	10	17	40	65	135	174	91	28	18	23	41	28	0	724
PERCENT		2.	2.	1.	2.	1.	2.	6.	9.	19.	24.	13.	4.	2.	3.	6.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(5 /01/77 TO 5 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		8	3	4	3	2	6	8	9	17	14	10	7	9	7	8	5	0	
GT	11. :	0	0	0	0	0	0	0	0	19	27	0	0	0	0	0	0	0 :	46
8. -	11. :	1	0	0	0	0	0	2	5	29	58	22	0	1	0	1	0	0 :	119
5. -	8. :	1	0	0	0	0	2	7	32	34	48	25	6	4	10	19	2	0 :	190
3. -	5. :	9	3	3	3	0	0	16	16	22	17	18	6	2	5	17	12	0 :	149
1. -	3. :	8	6	5	8	8	12	24	14	10	11	9	14	11	8	13	8	0 :	169
LT	1. :	3	5	4	4	5	2	3	5	1	0	3	2	3	4	2	2	0 :	48
TOTAL	:	22	14	12	15	13	16	52	72	115	161	77	28	21	27	52	24	0	721
PERCENT		3.	2.	2.	2.	2.	2.	7.	10.	16.	22.	11.	4.	3.	4.	7.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

'2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(5/01/77 TO 5/16/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		0	4	1	4	5	4	5	4	8	9	7	2	1	2	3	2	0	
GT 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11.	:	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0 :	12
5. - 8.	:	0	0	0	0	1	0	1	0	11	76	5	0	0	0	0	0	0 :	94
3. - 5.	:	0	1	0	1	0	1	2	7	14	47	3	0	0	0	1	0	0 :	77
1. - 3.	:	0	0	1	0	6	16	14	17	18	15	10	8	1	4	2	3	0 :	115
LT 1.	:	2	2	1	0	1	0	3	5	3	8	3	2	1	0	1	4	0 :	36
TOTAL	:	2	3	2	1	8	17	20	29	47	157	21	10	2	4	4	7	0	334
PERCENT		1.	1.	1.	0.	2.	5.	6.	9.	14.	47.	6.	3.	1.	1.	1.	2.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(6 /01/77 TO 6 /30/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	5	4	5	3	8	6	7	8	9	9	8	6	7	6	7	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	1	0	0	1	6	6	1	0	0	0	0	0 :	15
5. -	8. :	0	1	0	1	0	0	2	3	14	78	32	8	3	16	5	5	0 :	168
3. -	5. :	7	3	2	2	3	7	7	10	17	33	20	6	2	10	22	12	0 :	163
1. -	3. :	11	14	9	12	25	27	27	30	28	53	32	18	5	8	17	12	0 :	328
LT	1. :	1	2	0	3	2	4	4	6	6	4	4	2	0	2	1	2	0 :	43
TOTAL	:	19	20	11	18	30	39	40	49	66	174	94	35	10	36	45	31	0	717
PERCENT		3.	3.	2.	3.	4.	5.	6.	7.	9.	24.	13.	5.	1.	5.	6.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(6 /01/77 TO 6 /30/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	5	3	5	6	9	7	8	9	10	10	9	8	8	3	8	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	1	0	1	3	28	23	1	1	2	1	1	0 :	62
5. -	8. :	4	1	0	1	2	0	2	7	20	76	32	8	3	13	13	6	0 :	188
3. -	5. :	8	4	2	2	3	17	12	13	12	21	18	4	6	6	15	15	0 :	158
1. -	3. :	11	13	9	10	14	32	23	29	22	13	23	18	9	12	10	14	0 :	262
LT	1. :	2	3	1	4	5	3	5	4	2	2	4	3	3	2	2	3	0 :	48
TOTAL	:	25	21	12	17	24	53	42	54	59	140	100	34	22	35	41	39	0	718
PERCENT		3.	3.	2.	2.	3.	7.	6.	8.	8.	19.	14.	5.	3.	5.	6.	5.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(6/01/77 TO 6/25/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		6	5	4	3	4	4	8	8	8	8	8	8	4	4	3	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	2	4	10	1	1	1	0	0	0	0	0 :	19
5. -	8. :	1	3	0	0	0	0	4	5	14	19	8	1	0	0	0	0	0 :	55
3. -	5. :	6	7	2	1	2	5	13	13	21	21	3	5	3	2	4	3	0 :	111
1. -	3. :	7	14	10	6	12	16	21	46	57	37	15	8	5	2	13	10	0 :	279
LT	1. :	3	2	1	1	6	9	8	15	32	17	2	0	0	1	4	2	0 :	103
TOTAL	:	17	26	13	8	20	30	48	83	134	95	29	15	8	5	21	15	0	567
PERCENT		3.	5.	2.	1.	4.	5.	8.	15.	24.	17.	5.	3.	1.	1.	4.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(7 /01/77 TO 7 /31/77)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		WIND DIRECTION																	
		3	2	6	4	5	6	4	6	10	9	9	8	5	7	6	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	6	6	11	1	0	0	0	0	0 :	24
5. -	8. :	0	0	1	0	1	1	0	6	10	55	26	9	2	3	1	2	0 :	117
3. -	5. :	1	0	0	3	0	4	9	12	13	21	13	10	9	9	6	7	0 :	117
1. -	3. :	4	9	2	9	12	15	12	19	20	19	21	12	7	5	3	2	0 :	171
LT	1. :	2	0	1	3	1	0	0	2	2	1	0	0	1	0	0	0	0 :	13
TOTAL	:	7	9	4	15	14	20	21	39	51	102	71	32	19	17	10	11	0	442
PERCENT		2.	2.	1.	3.	3.	5.	5.	9.	12.	23.	16.	7.	4.	4.	2.	2.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(7 /01/77 TO 7 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	3	6	3	5	5	7	7	12	11	11	10	6	9	6	6	0	
GT	11. :	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0 :	4
8. -	11. :	0	0	0	0	0	0	0	0	11	20	17	2	0	1	0	0	0 :	51
5. -	8. :	0	0	1	0	1	1	6	12	10	47	24	12	5	6	3	2	0 :	130
3. -	5. :	5	1	0	2	5	8	9	13	15	14	6	8	9	6	3	7	0 :	111
1. -	3. :	4	8	7	3	11	12	18	7	9	10	7	10	8	5	5	4	0 :	128
LT	1. :	1	1	2	0	2	1	2	1	4	0	0	1	1	2	0	1	0 :	19
TOTAL	:	10	10	10	5	19	22	35	33	51	92	55	33	23	20	11	14	0	443
PERCENT		2.	2.	2.	1.	4.	5.	8.	7.	12.	21.	12.	7.	5.	5.	2.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

C-B SHALE OIL PROJECT

2 METER LEVEL

STATION 044 PERIOD(7/01/77 TO 7/28/77)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	4	5	8	3	2	5	7	8	8	8	4	6	3	3	5	5	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	1	0	0	0	0	2	4	2	0	0	0	0	0	0	0 :	9
5. - 8. :	0	1	0	0	0	1	2	4	20	17	0	2	0	0	1	1	0 :	49
3. - 5. :	3	6	4	1	0	2	3	8	18	34	9	2	1	1	4	4	0 :	100
1. - 3. :	6	15	8	7	9	40	30	85	72	51	20	19	7	7	21	5	0 :	402
LT 1. :	1	0	8	5	3	2	6	8	15	11	9	3	2	8	7	5	0 :	93
TOTAL :	10	22	21	13	12	45	41	107	129	115	38	26	10	16	33	15	0	653
PERCENT	2.	3.	3.	2.	2.	7.	6.	16.	20.	18.	6.	4.	2.	2.	5.	2.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(8 /01/77 TO 8 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	5	5	4	2	3	3	5	7	9	9	5	4	4	7	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0 :	4
5. -	8. :	1	1	1	0	0	0	0	1	6	13	21	3	0	0	2	4	0 :	53
3. -	5. :	7	0	1	1	0	1	2	3	14	19	14	4	6	5	12	12	0 :	101
1. -	3. :	15	7	4	9	13	20	17	28	20	25	13	14	7	8	9	11	0 :	220
LT	1. :	1	0	2	3	1	1	4	3	2	7	5	2	1	3	1	0	0 :	36
TOTAL	:	24	8	8	13	14	22	23	35	42	65	56	23	14	16	24	27	0	414
PERCENT		6.	2.	2.	3.	3.	5.	6.	8.	10.	16.	14.	6.	3.	4.	6.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL C-B SHALE OIL PROJECT

STATION A823 PERIOD(8 /01/77 TO 8 /31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	1	1	3	3	4	3	6	8	10	10	4	3	5	7	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	2	4	7	0	0	0	0	0	0 :	13
5. -	8. :	0	0	0	0	0	0	0	7	9	23	4	0	0	1	5	2	0 :	51
3. -	5. :	1	0	0	1	1	1	1	3	7	7	2	1	2	5	3	1	0 :	36
1. -	3. :	3	3	4	3	5	5	7	5	7	0	2	4	1	3	3	2	0 :	57
LT	1. :	1	1	1	0	2	1	1	4	1	0	1	0	0	2	1	0	0 :	16
TOTAL	:	5	4	5	4	8	7	9	19	26	34	16	5	3	11	12	5	0	173
PERCENT		3.	2.	3.	2.	5.	4.	5.	11.	15.	20.	9.	3.	2.	6.	7.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

2 METER LEVEL

C-B SHALE OIL PROJECT

STATION 044 PERIOD(8/01/77 TO 8/22/77)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		2	5	7	8	5	4	8	6	5	8	7	5	3	2	7	3	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	1	0	0	2	0	0	1	0	0	0	0	0	0	0 :	4
5. -	8. :	0	1	1	3	1	0	7	1	1	7	4	1	0	0	1	0	0 :	28
3. -	5. :	0	7	2	2	0	4	4	3	9	25	8	5	2	0	0	3	0 :	74
1. -	3. :	4	10	11	4	9	10	28	22	38	28	14	14	5	9	9	7	0 :	222
LT	1. :	1	6	1	4	3	7	26	26	19	8	16	3	6	3	5	1	0 :	135
TOTAL	:	5	24	15	14	13	21	67	52	67	69	42	23	13	12	15	11	0	463
PERCENT		1.	5.	3.	3.	3.	5.	14.	11.	14.	15.	9.	5.	3.	3.	3.	2.	0.	100.

WIND DIRECTION

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION A823 PERIOD(11/01/77 TO 11/30/77)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	3	4	1	3	3	2	4	9	12	12	8	7	9	8	6	8	0	
GT 11.	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	6
8. - 11.	0	0	0	0	0	0	0	2	36	10	1	0	8	1	0	1	0	59
5. - 8.	0	0	0	0	0	0	0	4	40	39	5	3	6	3	3	8	0	111
3. - 5.	1	1	0	1	1	0	10	12	38	35	11	5	14	10	12	4	0	155
1. - 3.	1	2	2	1	6	28	41	27	19	18	16	16	17	29	16	6	0	245
LT 1.	1	1	4	2	5	9	7	10	10	8	2	4	2	13	0	3	0	81
TOTAL	3	4	6	4	12	37	58	55	145	114	35	28	47	56	31	22	0	657
PERCENT	0.	1.	1.	1.	2.	6.	9.	8.	22.	17.	5.	4.	7.	9.	5.	3.	0.	100.

0 = NO OBSERVATIONS

(07/05/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(11/01/77 TO 11/30/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		8	5	1	7	4	3	5	6	12	13	13	3	10	9	5	8	0	
GT	11.	0	0	0	0	0	0	0	0	3	10	5	0	0	0	0	0	0	18
8. -	11.	1	0	0	0	0	0	0	0	18	40	13	2	7	4	0	2	0	87
5. -	8.	1	1	0	2	0	0	1	3	10	56	17	6	6	8	1	9	0	121
3. -	5.	1	1	0	0	1	2	8	7	23	44	11	6	10	13	19	3	0	149
1. -	3.	4	0	3	1	2	5	20	29	22	24	19	11	16	25	14	8	0	203
LT	1.	0	1	1	2	5	4	9	14	7	7	6	6	7	7	2	0	0	78
TOTAL		7	3	4	5	8	11	38	53	83	181	71	31	46	57	36	22	0	656
PERCENT		1.	0.	1.	1.	1.	2.	6.	8.	13.	28.	11.	5.	7.	9.	5.	3.	0.	100.

0 = NO OBSERVATIONS

(07/05/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(12/01/77 TO 12/31/77)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		2	1	1	3	5	4	3	4	10	12	10	8	8	7	5	2	2	
GT	11. :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0 :	2
8. -	11. :	0	0	0	0	0	0	0	0	3	23	10	1	1	0	0	0	0 :	38
5. -	8. :	0	0	0	0	1	0	0	0	18	60	6	5	24	7	2	0	0 :	123
3. -	5. :	0	0	0	1	1	4	5	4	15	41	25	9	7	4	2	0	0 :	118
1. -	3. :	2	1	2	3	12	21	14	20	17	17	10	7	3	5	3	1	8 :	146
LT	1. :	1	3	1	2	2	4	3	1	4	6	1	3	2	0	0	1	4 :	38
TOTAL	:	3	4	3	6	16	29	22	25	57	149	52	25	37	16	7	2	12	465
PERCENT		1.	1.	1.	1.	3.	6.	5.	5.	12.	32.	11.	5.	8.	3.	2.	0.	3.	100.

0 = NO OBSERVATIONS

(07/05/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

C-B SHALE OIL PROJECT

STATION AP23 PERIOD(12/01/77 TO 12/31/77)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	0	1	1	2	0	2	10	2	10	11	13	7	8	8	8	4	4	
GT 11.	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	9
8. - 11.	0	0	0	0	0	0	1	0	2	28	26	0	3	1	1	0	0	62
5. - 8.	0	0	0	0	0	0	0	0	2	48	31	9	8	21	4	0	0	123
3. - 5.	0	0	0	0	0	0	1	0	8	25	32	13	10	7	5	1	2	104
1. - 3.	0	2	2	3	0	4	2	9	13	24	25	16	15	4	3	1	6	129
LT 1.	1	0	1	0	1	1	1	2	3	5	8	3	3	2	3	1	2	37
TOTAL	1	2	3	3	1	5	5	11	28	134	127	41	39	35	16	3	10	464
PERCENT	0.	0.	1.	1.	0.	1.	1.	2.	6.	29.	27.	9.	8.	8.	3.	1.	2.	100.

0 = NO OBSERVATIONS

(07/05/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

C-B SHALE OIL PROJECT

STATION A823 PERIOD(1 /01/78 TO 1 /31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		3	1	1	1	3	3	4	7	12	8	6	4	5	4	5	3	3	
GT	11.	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
8. -	11.	0	0	0	0	0	0	0	0	15	6	0	0	0	0	0	0	0	21
5. -	8.	0	0	0	0	0	0	0	2	20	25	1	0	1	0	2	0	0	51
3. -	5.	1	0	0	0	1	5	13	31	67	48	10	2	3	15	10	2	2	210
1. -	3.	11	3	5	2	15	33	54	32	46	28	22	18	14	18	19	8	12	340
LT	1.	3	2	4	1	5	5	3	3	8	2	6	1	5	5	4	4	6	67
TOTAL		15	5	9	3	21	43	70	68	159	109	39	21	23	38	35	14	20	692
PERCENT		2.	1.	1.	0.	3.	6.	10.	10.	23.	16.	6.	3.	3.	5.	5.	2.	3.	100.

0 = NO OBSERVATIONS

(06/29/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(1 /01/78 TO 1 /31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		3	1	2	1	2	4	4	5	12	9	10	4	6	4	5	3	3	
GT	11. :	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0 :	2
8. -	11. :	0	0	0	0	0	0	0	0	9	10	2	0	0	0	0	0	0 :	21
5. -	8. :	0	0	0	0	0	0	0	1	15	46	13	0	2	0	1	0	0 :	78
3. -	5. :	1	0	0	0	0	2	16	19	75	58	19	1	2	14	18	1	1 :	227
1. -	3. :	7	3	4	2	4	14	36	35	48	37	29	16	16	24	22	9	6 :	312
LT	1. :	1	3	5	5	3	1	12	6	9	9	8	5	5	5	3	4	3 :	87
TOTAL	:	9	6	9	7	7	17	64	61	158	160	71	22	25	43	44	14	10	727
PERCENT		1.	1.	1.	1.	1.	2.	9.	8.	22.	22.	10.	3.	3.	6.	6.	2.	1.	100.

0 = NO OBSERVATIONS

(06/2 79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB20 PERIOD(2 /01/78 TO 2 /28/78)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	3	2	2	4	4	5	7	5	4	5	4	3	3	6	4	3	3	
GT 11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. - 11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. - 8.	0	0	0	0	0	1	8	1	0	1	0	0	0	3	0	0	0	14
3. - 5.	1	0	0	1	11	35	91	9	19	6	4	1	5	16	9	2	2	212
1. - 3.	3	4	5	4	58	140	54	7	15	6	5	2	3	23	19	1	39	388
LT 1.	1	2	1	5	13	11	1	0	0	0	0	0	1	0	0	0	6	41
TOTAL	5	6	6	10	82	187	154	17	34	13	9	3	9	42	28	3	47	655
PERCENT	1.	1.	1.	2.	13.	29.	24.	3.	5.	2.	1.	0.	1.	6.	4.	0.	7.	100.

0 = NO OBSERVATIONS

(07/05/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB20 PERIOD(3 /01/78 TO 3 /31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		4	3	2	3	4	5	6	4	4	5	5	4	7	5	5	5	2	
GT	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. -	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. -	8.	0	0	0	0	0	1	9	0	0	1	1	0	7	1	1	1	0	22
3. -	5.	2	1	0	3	13	17	69	10	25	15	5	1	5	15	5	0	0	186
1. -	3.	12	5	2	11	32	141	66	9	11	11	11	6	12	21	13	4	8	375
LT	1.	1	3	3	2	8	10	5	0	0	0	0	0	0	1	1	3	2	39
TOTAL		15	9	5	16	53	169	149	19	36	27	17	7	24	38	20	8	10	622
PERCENT		2.	1.	1.	3.	9.	27.	24.	3.	6.	4.	3.	1.	4.	6.	3.	1.	2.	100.

0 = NO OBSERVATIONS

(07/0 79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(3/01/78 TO 3/31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		0	0	0	2	3	7	4	3	4	5	6	4	4	6	6	3	0	
GT 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8.	:	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0	0 :	4
3. - 5.	:	0	0	0	0	0	0	2	0	1	3	4	1	2	0	6	0	0 :	19
1. - 3.	:	0	0	0	5	31	17	6	10	2	1	5	0	1	10	8	1	0 :	97
LT 1.	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL	:	0	0	0	5	31	18	8	10	3	4	10	1	3	11	15	1	0	120
PERCENT		0.	0.	0.	4.	26.	15.	7.	8.	2.	3.	8.	1.	2.	9.	0.	0.	0.	87.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL C-B SHALE OIL PROJECT

STATION AD56 PERIOD(3/01/78 TO 3/31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	3	4	3	4	3	4	4	6	3	3	4	4	3	6	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0 :	3
3. -	5. :	1	0	4	0	1	0	2	9	7	0	0	1	2	0	5	1	0 :	33
1. -	3. :	3	2	18	32	100	144	131	57	33	18	13	9	9	22	15	3	0 :	609
LT	1. :	0	0	0	0	4	2	0	2	0	1	0	1	0	1	1	0	0 :	12
TOTAL	:	4	2	22	32	105	146	133	68	42	19	13	11	11	23	22	4	0	657
PERCENT		1.	0.	3.	5.	16.	22.	20.	10.	6.	3.	2.	2.	2.	4.	3.	1.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(4/01/78 TO 4/30/78)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	4	3	2	4	5	6	10	12	11	9	7	4	5	6	8	0	
GT	11. :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0 :	1
8. -	11. :	0	0	0	0	0	0	0	2	6	3	1	0	0	0	0	0	0 :	12
5. -	8. :	0	0	0	0	0	0	1	0	9	6	11	3	0	0	1	5	0 :	36
3. -	5. :	0	1	0	0	4	4	1	6	5	5	5	2	2	4	9	2	0 :	50
1. -	3. :	1	0	3	5	21	12	10	5	7	2	0	1	2	1	0	0	0 :	75
LT	1. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0 :	2
TOTAL	:	1	1	8	5	25	16	12	13	28	16	17	7	4	5	11	7	0	176
PERCENT		1.	1.	5.	3.	14.	9.	7.	7.	16.	9.	10.	4.	2.	3.	6.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD56 PERIOD(4/01/78 TO 4/30/78)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		WIND DIRECTION																	
		3	3	2	4	4	4	5	6	6	6	6	4	6	5	7	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	3	5	2	1	0	1	0	6	0	0 :	18
3. -	5. :	0	0	0	2	5	3	3	22	46	5	4	3	2	12	30	2	0 :	144
1. -	3. :	4	4	3	18	63	36	130	65	39	22	28	10	13	25	21	5	0 :	536
LT	1. :	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0 :	4
TOTAL	:	4	4	4	20	70	89	139	90	90	29	33	13	16	37	57	7	0	702
PERCENT		1.	1.	1.	3.	10.	13.	20.	13.	13.	4.	5.	2.	2.	5.	8.	1.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL — C-B SHALE OIL PROJECT

STATION AB23 PERIOD(5 /01/78 TO 5 /31/78)

WIND SPEED MAX METERS/SEC.		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		8	5	4	3	3	5	4	6	10	11	10	6	7	8	8	6	1	
GT	11. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
8. -	11. :	1	0	0	0	0	0	0	0	9	29	11	0	0	2	1	0	0 :	53
5. -	8. :	15	2	0	0	0	1	0	5	54	45	31	3	4	7	10	5	0 :	182
3. -	5. :	18	1	4	1	4	8	10	7	42	31	21	7	4	9	51	20	0 :	238
1. -	3. :	9	14	9	8	13	13	21	11	12	20	11	18	22	12	22	13	1 :	229
LT	1. :	1	1	0	0	2	1	2	0	3	2	1	1	1	1	3	1	1 :	21
TOTAL	:	44	18	13	9	19	23	33	23	120	128	75	29	31	31	87	39	2	724
PERCENT		6.	2.	2.	1.	3.	3.	5.	3.	17.	18.	10.	4.	4.	4.	12.	5.	0.	100.

0 = NO OBSERVATIONS

(06/29/79-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

C-B SHALE OIL PROJECT

STATION AB23 PERIOD(5 /01/78 TO 5 /31/78)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
	9	6	5	3	3	5	6	7	10	11	9	9	8	8	9	6	1	
GT 11.	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8. - 11.	1	0	0	0	0	0	0	0	9	36	20	2	3	1	3	0	0	75
5. - 8.	13	1	1	0	0	1	1	1	38	60	38	4	4	4	9	8	0	183
3. - 5.	22	4	3	1	3	3	6	3	21	31	28	5	6	9	35	30	0	210
1. - 3.	18	13	4	5	12	8	13	11	24	15	11	13	15	24	22	12	2	222
LT 1.	1	0	0	1	2	3	0	3	3	7	2	6	2	4	5	3	0	42
TOTAL	55	18	8	7	17	15	20	18	95	151	99	30	30	42	74	53	2	734
PERCENT	7.	2.	1.	1.	2.	2.	3.	2.	13.	21.	13.	4.	4.	6.	10.	7.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(5/01/78 TO 5/31/78)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	1	0	6	6	3	3	4	8	11	11	8	9	6	7	5	7	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	4	14	0	1	0	0	0	0	0 :	19
5. - 8. :	0	0	1	1	0	0	0	6	7	13	21	2	1	1	0	1	0 :	54
3. - 5. :	0	0	3	1	0	0	3	4	2	8	15	7	6	7	9	4	0 :	69
1. - 3. :	2	0	4	20	46	13	10	3	4	3	7	2	6	9	9	4	0 :	142
LT 1. :	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0 :	2
TOTAL :	2	1	8	22	46	13	13	13	17	38	43	12	13	18	18	9	0	286
PERCENT	1.	0.	3.	8.	16.	5.	5.	5.	6.	13.	15.	4.	5.	6.	6.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD56 PERIOD(5/01/78 TO 5/23/78)

WIND SPEED MAX METERS/SEC	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	4	5	5	4	5	4	4	5	7	6	5	4	5	8	7	6	0	
GT 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. - 11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. - 8. :	0	0	0	0	0	0	0	0	4	3	0	0	0	3	1	1	0 :	12
3. - 5. :	1	3	5	4	8	1	1	14	33	15	1	4	5	6	26	5	0 :	132
1. - 3. :	7	3	11	22	42	65	79	32	18	15	8	8	8	17	27	6	0 :	368
LT 1. :	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0 :	3
TOTAL :	8	6	16	26	51	66	80	46	55	33	10	12	14	26	54	12	0	515
PERCENT	2.	1.	3.	5.	10.	13.	16.	9.	11.	6.	2.	2.	3.	5.	10.	2.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(6/01/78 TO 6/30/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		7	5	5	5	8	7	4	6	10	11	11	12	6	12	8	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0 :	2
9. -	11. :	0	0	0	0	0	0	0	0	2	4	22	10	0	0	0	0	0 :	38
5. -	8. :	2	0	0	0	2	2	0	1	4	36	50	16	1	8	12	1	0 :	135
3. -	5. :	5	6	2	3	4	4	2	3	10	23	20	8	5	11	9	10	0 :	125
1. -	3. :	9	10	10	55	110	65	20	6	5	10	8	19	15	32	25	18	0 :	417
LT	1. :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0 :	2
TOTAL	:	16	16	12	58	116	72	22	10	21	73	100	54	21	52	47	29	0	719
PERCENT		2.	2.	2.	8.	16.	10.	3.	1.	3.	10.	14.	8.	3.	7.	7.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(7/01/78 TO 7/31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	4	4	7	6	6	8	9	10	11	9	9	8	7	7	7	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	1	2	5	2	1	0	0	0	0	0 :	11
5. -	8. :	0	0	0	1	1	1	5	4	7	29	27	23	12	4	4	2	0 :	120
3. -	5. :	2	4	5	4	12	10	14	9	10	21	22	18	17	11	11	9	0 :	179
1. -	3. :	4	10	24	46	119	56	28	10	12	21	10	8	8	14	17	14	0 :	401
LT	1. :	0	0	0	2	9	3	0	0	2	4	6	1	0	0	0	0	0 :	27
TOTAL	:	6	14	29	53	141	70	47	24	33	80	67	51	37	29	32	25	0	738
PERCENT		1.	2.	4.	7.	19.	9.	6.	3.	4.	11.	9.	7.	5.	4.	4.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD56 PERIOD(7/01/78 TO 7/ 7/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		3	2	3	3	4	4	3	2	4	3	2	2	3	4	3	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
3. -	5. :	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	3	0 :	7
1. -	3. :	4	1	5	6	22	21	28	8	13	5	6	1	1	1	12	17	0 :	151
LT	1. :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0 :	1
TOTAL	:	4	1	5	6	23	22	29	8	14	5	6	1	1	2	12	20	0	159
PERCENT		3.	1.	3.	4.	14.	14.	18.	5.	9.	3.	4.	1.	1.	1.	8.	13.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(8/01/78 TO 8/31/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		4	5	5	5	5	9	6	8	9	13	10	10	7	9	7	7	0	
GT	11. :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 :	1
8. -	11. :	0	0	0	0	0	1	0	0	1	4	7	2	0	1	0	0	0 :	16
5. -	8. :	0	0	0	0	0	0	1	8	21	33	27	9	2	3	1	3	0 :	108
3. -	5. :	1	7	6	9	7	15	12	14	10	15	14	13	13	13	15	17	0 :	181
1. -	3. :	3	8	36	72	107	56	21	15	9	17	11	20	15	15	18	12	0 :	435
LT	1. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL	:	4	15	42	81	114	72	34	37	41	70	59	44	30	32	34	32	0	741
PERCENT		1.	2.	6.	11.	15.	10.	5.	5.	6.	9.	8.	6.	4.	4.	5.	4.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD56 PERIOD(8/01/78 TO 8/18/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		0	0	2	3	4	4	5	6	6	6	5	3	3	4	5	5	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	2	1	2	0	0	0	0	0	0	0 :	5
3. -	5. :	0	0	0	0	2	2	5	6	7	8	2	0	0	6	11	5	0 :	54
1. -	3. :	0	0	3	9	29	48	70	46	20	11	9	1	3	5	29	16	0 :	299
LT	1. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL	:	0	0	3	9	31	50	75	54	28	21	11	1	3	11	40	21	0	353
PERCENT		0.	0.	1.	3.	9.	14.	21.	15.	8.	6.	3.	0.	1.	3.	11.	0.	0.	94.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD42 PERIOD(9/01/78 TO 9/30/78)

WIND SPEED MAX METERS/SEC		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CAL M	TOTAL
		4	4	4	5	5	7	4	13	10	15	8	7	8	9	6	4	1	
GT	11. :	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0 :	3
8. -	11. :	0	0	0	0	0	0	0	1	5	6	0	0	0	1	0	0	0 :	13
5. -	8. :	0	0	0	0	0	1	0	3	19	15	16	7	4	5	1	0	0 :	71
3. -	5. :	1	2	2	6	5	5	1	2	5	27	16	13	9	17	12	3	0 :	126
1. -	3. :	0	10	27	116	110	45	16	7	9	15	13	20	28	34	30	16	10 :	506
LT	1. :	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
TOTAL	:	1	12	29	123	115	51	17	15	38	64	45	40	41	57	43	19	10	720
PERCENT		0.	2.	4.	17.	16.	7.	2.	2.	5.	9.	6.	6.	6.	8.	6.	3.	1.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

C-B SHALE OIL PROJECT

STATION AD56 PERIOD(9/01/78 TO 9/30/78)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		0	0	3	3	3	4	3	5	5	4	4	6	2	4	5	4	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
5. -	8. :	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0 :	1
3. -	5. :	0	0	0	0	0	1	0	3	6	6	4	0	0	1	15	1	0 :	37
1. -	3. :	0	0	3	7	14	20	70	77	50	15	13	15	6	28	41	12	0 :	371
LT	1. :	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0 :	4
TOTAL	:	0	0	3	7	14	21	71	80	57	21	18	16	6	29	57	13	0	413
PERCENT		0.	0.	1.	2.	3.	5.	17.	19.	14.	5.	4.	4.	1.	7.	14.	3.	0.	100.

0 = NO OBSERVATIONS

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/76 to 10/31/76)

STATION AB20 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11																	
5 - 8					2	1	2				3	1	3	3			15
3 - 5	1	1	1	1	14	36	11	12	30	13	5	12	46	27	10	7	227
1 - 3	16	14	12	26	448	183	19	5	10	12	9	20	84	49	44	21	972
< 1	12	13	27	67	42	5	1	1			1	1	2		8	7	187
TOTAL	29	28	40	94	506	225	33	18	40	25	18	34	135	79	62	35	1401
PERCENT	2	2	3	7	36	16	2	1	3	2	1	2	10	6	4	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11	2								2	5	6						15
5 - 8	13	3			1			7	20	70	19	3	3	8	9	11	167
3 - 5	27	3	1	1	4	5	8	13	37	79	17	5	2	26	45	42	315
1 - 3	70	52	29	39	52	79	78	67	87	127	128	68	54	75	66	56	1127
< 1	9	8	25	21	33	30	56	60	72	67	49	31	22	18	13	10	524
TOTAL	121	66	55	61	90	114	142	147	218	348	219	107	81	127	133	119	2148
PERCENT	6	3	3	3	4	5	7	7	10	16	10	5	4	6	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11											1	1					2
8 - 11		3							8	28	9	3	1	1	1		54
5 - 8		24	4			2	2		10	29	90	31	5	2	7	16	25	247
3 - 5		50	10	3	2	5	6	24	14	27	65	27	13	9	19	62	53	389
1 - 3		65	57	41	32	33	87	89	64	57	58	42	62	76	72	59	47	941
< 1		19	32	25	35	33	44	36	42	40	40	32	34	36	26	23	22	519
TOTAL		161	103	69	69	73	139	149	130	161	281	142	118	124	125	161	147	2152
PERCENT		8	5	3	3	3	6	7	6	7	13	7	5	6	6	8	7	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/76 to 11/30/76)

STATION AD44 LEVEL 2 M

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11			3						10	11							24
5 - 8		1	3	3		1		1	3	10	12						34
3 - 5	41	28	9		1		1	9	38	42	4			2	8	26	209
1 - 3	56	61	45	17	8	40	156	159	151	124	41	12	13	29	54	89	1055
<1	24	36	18	14	14	27	82	84	100	69	31	18	28	21	34	38	638
TOTAL	122	128	78	31	24	67	240	255	309	258	76	30	41	52	96	153	1960
PERCENT	6	6	4	2	1	3	12	13	16	13	4	2	2	3	5	8	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1 /78 to 11/ 30/78)

STATION AB23 LEVEL 60m

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	6.	7.	4.	.	.	.	.	.	17
8 - 11	1.	.	.	.	.	.	.	1.	8.	17.	12.	2.	.	.	.	.	41
5 - 8	5.	.	.	.	.	.	1.	4.	13.	60.	45.	9.	1.	1.	12.	17.	168
3 - 5	45.	11.	1.	2.	1.	1.	9.	10.	19.	34.	37.	15.	16.	12.	23.	32.	268
1 - 3	31.	19.	12.	7.	14.	12.	36.	39.	31.	30.	25.	17.	22.	30.	54.	49.	428
< 1	16.	10.	6.	11.	13.	21.	27.	17.	24.	29.	27.	17.	22.	25.	23.	18.	306
TOTAL	98.	40.	19.	20.	28.	34.	73.	71.	101.	177.	150.	60.	61.	68.	112.	116.	1228
PERCENT	8.	3.	2.	2.	2.	3.	6.	6.	8.	14.	12.	5.	5.	6.	9.	9.	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9 /1 /78 to 11/30/78)

STATION AD42 LEVEL 10m

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11								2		1		1					4
8 - 11								2	9	7	2	1	3	4	1		29
5 - 8						1		4	31	26	30	21	12	8	8	1	142
3 - 5	1	5	6	7	8	12	4	8	32	49	29	27	33	42	34	4	301
1 - 3	14	52	98	325	325	107	48	22	69	54	38	71	134	108	95	50	1610
< 1	0	1	0	2	1	2	1	0	4	0	1	1	1	1	1	1	17
TOTAL	15	58	104	334	334	122	53	38	145	137	100	122	183	163	139	56	2103
PERCENT	1	3	5	16	16	6	2	2	7	6	5	6	9	8	6	2	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/ 1/78 to 11/30/78)

STATION AD56 LEVEL 10m

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11																	
5 - 8												1					1
3 - 5							1		3	6	6	4	0	1	1	15	1	38
1 - 3				3	8	15	22	71	79	52	17	14	15	6	34	44	12	392
< 1		0	0	0	0	0	0	2	0	1	0	1	0	0	0	1	0	5
TOTAL		0	0	3	8	15	23	73	82	59	23	19	16	7	35	60	13	436
PERCENT		0	0	1	2	3	5	17	19	13	5	4	4	2	8	14	3	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1/76 to 2/28/77)

STATION AB23 LEVEL 10M

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									1								1
8 - 11									8	2	1			2			13
5 - 8		10						4	36	88	15	1	4	5	2	6	171
3 - 5	8	5	1				3	18	46	98	27	5	20	39	38	19	327
1 - 3	30	27	20	37	80	122	119	110	114	140	89	55	69	93	43	46	1194
< 1	12	7	7	17	33	26	49	53	66	55	30	23	23	12	10	18	441
TOTAL	60	39	28	54	113	148	171	185	271	383	162	84	116	151	93	89	2147
PERCENT	3	2	1	2	5	7	8	9	13	18	8	4	5	7	4	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD 12/1/76 to 2/23/77)

STATION AD44 LEVEL 2 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	1						1										2
8 - 11	1		1					1	1	6							10
5 - 8	5	5			1			1	3	13	3						31
3 - 5	35	16	7	7			2	20	64	74	10		1	1	3	28	268
1 - 3	77	62	17	13	8	39	240	304	169	81	46	15	13	27	32	81	1224
<1	23	24	16	6	22	12	37	48	39	30	7	12	14	23	23	24	360
TOTAL	142	107	41	26	31	51	280	374	276	204	66	27	28	51	58	133	1895
PERCENT	7	6	2	1	2	3	15	20	15	11	3	1	1	3	3	7	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	10	9	.	.	.	.	.	1	20
8 - 11	.	1	.	.	.	.	.	1	50	81	14	.	2	.	2	6	157
5 - 8	.	18	3	1	.	.	1	8	26	58	128	66	14	18	19	24	27	411
3 - 5	.	17	10	3	5	1	7	22	50	68	72	33	21	23	32	59	39	462
1 - 3	.	33	21	23	23	56	68	68	69	96	97	86	39	56	56	62	34	887
< 1	.	7	8	7	13	16	15	15	27	21	23	15	11	12	11	5	4	210
TOTAL	.	76	42	34	41	73	91	113	173	303	410	214	85	111	118	152	111	2147
PERCENT	.	4	2	2	2	3	4	5	8	14	19	10	4	5	6	7	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									24	40	1					4	69
8 - 11	9	1					2	6	49	108	45		3	4	4	10	241
5 - 8	26	4	2	1	1	4	16	46	73	108	55	20	22	20	36	21	455
3 - 5	20	10	10	6	4	10	33	57	50	62	40	26	21	27	60	46	482
1 - 3	28	26	10	18	32	67	78	53	42	36	30	43	52	65	57	46	683
<1	13	19	15	15	14	11	15	23	15	12	11	14	14	13	19	9	232
TOTAL	96	60	37	40	51	92	144	185	253	366	182	103	112	129	176	136	2162
PERCENT	4	3	2	2	2	4	7	9	12	17	8	5	5	6	8	6	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/77 to 5/31/77)

STATION AD44 LEVEL 2 M

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	1	3	2								1			1			8
8 - 11	1	5	2						1	11	2		1			1	24
5 - 8	3	8	7		1		1		11	80	12	4	2		7	3	139
3 - 5	10	24	5	6		4	12	17	27	79	15	5	2		11	8	225
1 - 3	18	25	22	5	12	36	46	70	79	44	36	14	5	11	15	28	466
< 1	15	17	8	4	3	5	16	17	15	21	12	2	8	3	3	14	163
TOTAL	48	82	46	15	16	45	75	104	133	235	78	25	18	15	36	54	1025
PERCENT	5	8	4	1	2	4	7	10	13	23	8	2	2	1	5	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11						1			7	13	20	2					43
5 - 8	1	2	2	1	1	1	2	10	30	146	79	20	5	19	8	11	338
3 - 5	15	3	3	6	3	12	18	25	44	73	47	20	17	24	40	31	381
1 - 3	30	30	15	30	50	62	56	77	68	97	66	44	19	21	29	25	719
<1	4	2	3	9	4	5	8	11	10	12	9	4	2	5	2	2	92
TOTAL	50	37	23	46	58	81	84	123	159	341	221	90	43	69	79	69	1573
PERCENT	3	2	2	3	4	5	5	8	10	22	14	6	3	4	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	2	1	1	.	.	.	.	.	4
8 - 11	.	.	.	.	.	1	.	1	16	52	47	3	1	3	1	1	126
5 - 8	4	1	1	1	3	1	8	26	39	146	60	20	8	20	21	10	369
3 - 5	14	5	2	5	9	26	22	29	34	42	26	13	17	17	21	23	305
1 - 3	18	24	20	16	30	49	48	41	38	23	32	32	18	20	18	20	447
< 1	4	5	4	4	9	5	8	9	7	2	5	4	4	6	3	4	83
TOTAL	40	35	27	26	51	82	86	106	136	266	171	72	48	66	64	58	1334
PERCENT	3	3	2	2	4	6	6	8	10	20	13	5	4	5	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/77 to 8/31/77)

STATION AD44 LEVEL 2 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11				1	1			4	6	14	4	1	1				32
5 - 8		1	5	1	3	1	1	13	10	35	43	12	4			2	1	132
3 - 5		9	20	8	4	2	11	20	24	48	80	20	12	6	3	8	10	285
1 - 3		17	39	29	17	30	66	79	153	167	116	49	41	17	18	43	22	903
<- 1		5	8	10	10	12	18	40	49	66	36	27	6	8	12	16	8	331
TOTAL		32	72	49	35	45	96	156	242	330	279	109	64	31	33	69	41	1683
PERCENT		2	4	3	2	3	6	9	14	20	17	6	4	2	2	4	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11									9	21	13	1	1				45
5 - 8	1	2	1		1			4	47	101	82	10	14	9	12	3	287
3 - 5		5	2	3	2	2	2	30	59	121	79	25	22	23	26	10	411
1 - 3		8	10	24	48	102	132	127	115	148	104	76	40	44	42	15	1035
< 1			4	6	15	20	28	48	39	53	29	13	7	19	9	1	291
TOTAL	1	15	17	33	66	124	162	209	269	444	307	125	84	95	89	29	2069
PERCENT	0	1	1	2	3	6	8	10	13	21	15	6	4	5	4	1	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/77 to 11/30/77)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	2	7	1	.	.	.	.	.	10
8 - 11	.	.	.	.	.	.	.	2	55	31	14	1	8	1	.	.	112
5 - 8	.	.	2	.	.	1	1	17	84	153	53	14	17	16	9	10	377
3 - 5	1	2	1	3	3	9	26	56	83	90	52	22	29	29	35	19	460
1 - 3	1	4	11	17	45	103	122	86	68	76	54	56	44	70	36	20	813
< 1	1	1	14	14	28	39	41	39	46	25	15	15	4	17	.	4	303
TOTAL	3	7	28	34	76	152	190	200	338	382	189	108	102	133	80	53	2075
PERCENT	0	0	1	2	4	7	9	10	16	18	9	5	5	7	4	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1/77 to 2/28/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11									7	8	12						27
5 - 8								2	28	84	51	4	10	12	3		194
3 - 5	4	1				1	8	27	64	122	70	15	9	24	29	8	386
1 - 3	13	12	6	12	33	78	123	80	119	119	86	22	24	37	34	24	869
< 1	4	8	11	8	24	25	45	39	31	26	22	11	15	9	13	9	329
TOTAL	21	21	17	20	57	104	176	148	249	359	241	52	58	82	79	41	1725
PERCENT	1	1	1	1	3	6	10	9	14	21	14	3	4	5	5	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1/77 to 2/28/78)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									3	2							5
8 - 11									20	36	10	1	1				68
5 - 8					1		1	13	60	125	12	5	26	9	4	2	258
3 - 5	1	1		1	2	12	40	54	110	137	51	16	14	28	22	9	507
1 - 3	10	8	16	11	39	77	115	85	95	67	47	33	33	38	39	17	774
< 1	8	6	9	6	9	11	12	5	16	12	12	7	9	8	9	6	158
TOTAL	19	15	25	18	51	100	168	157	304	379	132	62	83	83	74	34	1770
PERCENT	1	1	2	1	3	6	10	9	17	22	8	4	5	5	4	2	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (4/1/78 to 5/31/78)

STATION AB20 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11								1	2			1	2	3	3		12
5 - 8					1		11	24	51	15	16	2	15	25	9	3	172
3 - 5	5		2	2	12	49	74	19	40	28	20	6	33	54	46	19	409
1 - 3	11	7	6	18	105	231	68	10	14	14	12	8	31	36	29	13	613
< 1	4	4	5	11	30	26	4	2			1		1		3	1	92
TOTAL	20	11	13	31	148	306	157	56	107	57	49	17	82	118	90	36	1298
PERCENT	2	1	1	2	12	24	12	4	8	4	4	1	6	9	7	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/78 to 5/31/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	2	3	.	.	.	.	.	.	5
8 - 11	1	.	.	.	.	.	.	.	10	31	10	3	.	1	2	.	58
5 - 8	8	4	.	.	.	2	1	4	75	92	65	12	2	8	11	8	292
3 - 5	21	11	6	.	3	5	12	25	117	122	65	22	18	31	49	46	553
1 - 3	19	19	24	16	29	61	66	57	87	89	82	49	35	43	50	40	766
<1	7	8	8	13	11	22	34	23	34	35	26	23	11	11	11	13	290
TOTAL	56	42	38	29	43	90	113	109	325	372	248	109	66	94	123	107	1964
PERCENT	3	2	2	1	2	5	6	6	16	19	13	6	3	5	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/78 to 4/30/78)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									1								1
8 - 11									35	24	7	1		2		2	71
5 - 8							9	6	80	61	21	8	9	11	12	9	226
3 - 5		7	7	1		1	9	19	24	82	78	26	15	24	20	26	14	353
1 - 3		8	9	9	12	21	50	64	40	52	43	31	38	31	35	35	28	533
< 1		3	6	6	4	14	5	8	11	10	9	8	13	5	6	7	5	137
TOTAL		18	22	16	16	36	64	100	81	260	215	93	75	69	74	80	58	1333
PERCENT		2	2	1	1	3	5	8	6	20	16	7	6	6	6	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/78 to 5/31/78)

STATION AD42 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									1								1
8 - 11								2	10	17	1	1					31
5 - 8			1	1		1	1	6	16	19	33	5	1	2	2	6	94
3 - 5		1	3	1	4	4	6	10	8	16	24	10	10	11	24	6	138
1 - 3	3		12	30	98	42	26	18	13	6	12	3	9	20	17	5	314
< 1		1										1		1	1		4
TOTAL	3	2	16	32	102	47	33	36	48	58	70	20	20	34	44	17	582
PERCENT	1	0	3	5	18	8	6	6	8	10	12	3	3	6	8	3	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (3/1/78 to 5/31/78)

STATION AD56 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11																	
5 - 8								3	11	5	1		1	3	8	1	33
3 - 5	2	3	9	6	14	4	11	45	86	20	5	8	9	18	61	8	309
1 - 3	14	9	32	72	205	295	340	154	90	55	49	27	30	64	63	14	1513
<1			1		7	2	1	2		1	1	1	1	1	1		19
TOTAL	16	12	42	78	226	301	352	204	187	81	56	36	41	86	133	23	1874
PERCENT	1	1	2	4	12	16	19	11	10	4	3	2	2	5	7	1	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/78 to 8/31/78)

STATION AB20 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11							1						1	1			3
5 - 8	1			1	2	5	6	2	18	18	28	12	7	12	9	1	122
3 - 5	16	4	4	1	41	75	83	24	76	62	94	22	41	39	36	8	626
1 - 3	37	13	22	75	336	261	103	21	17	14	25	7	36	37	33	15	1052
< 1	1		4	11	35	14	3	1	3		1		2	1	2		78
TOTAL	55	17	30	88	414	355	196	48	114	94	148	41	87	90	80	24	1881
PERCENT	3	1	2	5	22	19	10	2	6	5	8	2	5	5	4	1	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/78 to 8/31/78)

STATION AB23 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									2	6	3	1					12
8 - 11	1					1	1	4	28	76	37	2				3	153
5 - 8	11	6	1	1	1		5	18	88	160	80	9	8	15	22	25	450
3 - 5	32	15	14	8	13	21	38	41	98	91	59	21	23	31	58	42	605
1 - 3	38	15	22	52	68	82	48	49	55	60	63	40	46	41	50	38	767
< 1	24	8	11	4	7	7	7	5	5	9	5	6	7	10	9	11	135
TOTAL	106	44	48	65	89	111	99	117	276	402	247	79	84	97	139	119	2122
PERCENT	5	2	2	3	4	5	5	5	13	19	11	4	4	5	7	6	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD 6/1/78 to 8/31/78

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11										1	1						2
8 - 11	1				1		2	2	10	47	51	11	1		2	1	119
5 - 8	10	2	2		2	1	8	15	88	195	106	23	5	11	18	13	499
3 - 5	25	14	12	7	13	38	40	41	68	91	76	28	27	32	39	45	601
1 - 3	34	23	16	20	40	75	68	55	53	39	47	38	53	52	63	44	741
< 1	12	4	10	11	23	21	16	15	11	10	4	7	10	12	6	8	196
TOTAL	82	43	40	38	79	135	134	128	230	383	285	107	96	107	128	111	2158
PERCENT	4	2	2	2	4	6	6	6	11	18	13	5	5	5	6	5	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (6/1/78 to 8/31/78)

STATION AD42 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	.	1	.	1	.	1	.	.	3
8 - 11	.	.	.	.	.	1	.	1	5	13	31	13	.	1	.	.	65
5 - 8	2	.	.	1	3	3	6	13	32	98	104	48	15	15	17	6	363
3 - 5	8	17	13	16	23	29	28	26	30	59	56	39	35	35	35	36	485
1 - 3	16	28	70	173	336	177	69	31	26	48	29	47	38	61	60	44	1253
< 1	.	.	.	.	2	9	4	.	.	2	4	6	1	.	.	1	.	29
TOTAL	26	45	83	192	371	214	103	71	95	223	226	149	88	113	113	86	2198
PERCENT	1	2	4	9	17	10	5	3	4	10	10	7	4	5	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (7/1/78 to 8/31/78)

STATION AD56 LEVEL 10 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11																	
5 - 8								2	1	2							5
3 - 5					3	3	5	6	8	8	2			7	11	8	61
1 - 3	4	1	8	15	51	69	98	54	33	16	15	2	4	6	41	33	450
< 1							1										1
TOTAL	4	1	8	15	54	72	104	62	42	26	17	2	4	13	52	41	517
PERCENT	1	0	2	3	10	14	20	12	8	5	3	0	1	3	10	8	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/ 1/78 to 11/30/78)

STATION AB20 LEVEL 10m

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
8 - 11	.	.	.	.	.	.	2	.	.	.	.	.	.	1	.	.	3
5 - 8	.	.	.	.	.	.	12	8	7	8	3	5	3	8	2	.	56
3 - 5	4	2	2	1	8	25	44	31	26	15	22	23	59	50	15	2	329
1 - 3	28	43	19	63	357	269	54	10	13	18	14	31	86	108	47	20	1180
< 1	3	12	9	25	137	70	5	1	3	1	3	3	7	23	11	3	316
TOTAL	35	57	30	89	502	364	117	50	49	42	42	62	155	190	75	25	1884
PERCENT	2	3	2	5	27	19	6	3	3	2	2	3	8	10	4	1	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/78 to 11/30/78)

STATION AB23 LEVEL 10m

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11										4	1	8	1				14
8 - 11		1								11	23	11	4	3		1	54
5 - 8		3	1						8	24	83	42	21	6	7	14	11	220
3 - 5		40	11	2		2	3	9	33	50	77	42	19	17	21	40	47	413
1 - 3		49	25	20	47	46	49	59	40	56	98	87	57	41	52	79	61	866
< 1		50	37	33	31	30	20	22	17	28	31	29	23	23	34	46	28	482
TOTAL		143	74	55	78	78	72	90	98	169	316	212	132	91	114	180	147	2049
PERCENT		7	4	3	4	4	4	4	5	8	15	10	6	4	6	9	7	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/ 1/78 to 11/30/78)

STATION AB23 LEVEL 30m

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11										5	6						11
8 - 11										14	21	14				1	50
5 - 8		5	3	1				2	7	36	97	35	6		6	19	217
3 - 5		47	30	2	1		3	4	13	27	53	104	55	18	15	17	40	429
1 - 3		64	36	27	17	26	43	44	71	42	68	58	65	41	41	70	60	773
< 1		36	25	28	21	28	49	34	38	28	29	33	32	25	33	53	41	533
TOTAL		152	94	58	39	54	95	82	124	104	205	319	201	90	89	146	161	2013
PERCENT		8	5	3	2	3	5	4	6	5	10	16	10	4	4	7	8	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1 /78 to 2 /28/79)

STATION AB20 LEVEL 10m

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11																	
8 - 11																	
5 - 8					4	4	27				2		1		1		39
3 - 5		2	2		8	52	59	158	23	26	15	10	8	48	23	13	5	452
1 - 3		3	11	8	13	199	334	115	31	37	16	19	12	41	144	50	7	1040
< 1		16	15	19	31	143	83	13	5	3	2	0	1	2	33	41	12	419
TOTAL		21	28	27	52	398	480	313	59	66	33	31	21	92	200	105	24	1950
PERCENT		1	1	1	3	21	25	16	3	3	2	2	1	5	10	5	1	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/ 1/78 to 2 /28/79)

STATION AB23 LEVEL 10m

WIND SPEED INTERVAL (MPS)	WIND DIRECTION																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	1	6	10	.	.	.	.	.	17
8 - 11	.	.	.	.	.	.	.	4	11	42	29	2	.	.	.	.	88
5 - 8	1	.	.	.	.	.	1	4	37	145	49	3	1	1	9	13	254
3 - 5	8	2	1	1	4	7	12	41	84	144	46	15	6	14	36	21	442
1 - 3	25	17	17	35	68	103	88	92	60	104	71	43	58	82	56	32	951
< 1	24	28	34	21	29	19	13	7	13	16	22	9	16	21	16	17	305
TOTAL	58	47	52	57	101	129	114	148	206	447	227	72	81	118	117	83	2057
PERCENT	3	2	2	3	5	6	6	7	10	22	11	3	4	6	6	4	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1 /78 to 2 /1 /79)

STATION AB23 LEVEL 30m

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	3.	1.	4.	28.	9.	.	.	.	45
8 - 11	.	1.	.	.	.	.	.	.	0.	4.	22.	25.	3.	1.	.	.	56
5 - 8	.	8.	2.	.	.	.	.	1.	2.	8.	32.	33.	5.	1.	2.	6.	9.	109
3 - 5	.	9.	2.	.	.	1.	1.	6.	8.	22.	36.	15.	6.	2.	6.	5.	16.	135
1 - 3	.	6.	6.	2.	1.	4.	2.	6.	6.	4.	21.	14.	8.	5.	3.	5.	9.	102
< 1	.	1.	1.	2.	1.	1.	2.	3.	5.	10.	5.	4.	2.	3.	7.	7.	2.	56
TOTAL	.	25.	11.	4.	2.	6.	5.	16.	24.	49.	120.	119.	33.	12.	18.	23.	36.	503
PERCENT	.	5.	2.	1.	0.	1.	1.	3.	5.	10.	24.	24.	6.	2.	4.	5.	7.	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1/78 to 2/28/79)

STATION AB23 LEVEL 60m

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11										11	21	1					33
8 - 11								1	7	25	88	4					125
5 - 8	1	5			1		1	6	16	105	91	17	2	2	3	7	257
3 - 5	5	5	1		0	1	8	26	48	108	68	28	7	13	19	17	354
1 - 3	16	12	13	6	13	28	57	68	64	80	40	25	30	54	66	35	607
< 1	13	11	9	14	11	13	21	15	8	19	12	14	20	19	12	12	223
TOTAL	35	33	23	20	25	42	87	116	143	348	320	89	59	88	100	71	1599
PERCENT	2	2	1	1	2	3	5	7	9	22	20	6	4	6	6	4	100.0
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (12/1/76 to 2/28/78)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11									2	2				1			5
8 - 11	3								9	27	8			1			48
5 - 8	13	5	1					8	39	118	30	4	11	8	8	11	256
3 - 5	17	3	3			5	16	22	54	87	42	4	18	38	55	24	388
1 - 3	40	29	22	22	40	96	137	119	106	63	56	53	55	94	50	40	1022
< 1	24	23	28	17	33	32	40	31	47	33	23	26	22	22	9	16	426
TOTAL	97	60	54	39	73	133	193	180	257	330	159	87	106	164	122	91	2145
PERCENT	5	3	3	2	3	6	9	8	12	15	7	4	5	8	6	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

PERIOD (9/1/77 to 8/31/78)

STATION AB23 LEVEL 30 M

WIND DIRECTION

WIND SPEED INTERVAL (MPS)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
> 11	.	.	.	.	.	.	.	.	6	10	2	.	.	.	.	.	18
8 - 11	1	.	.	.	1	.	2	4	120	138	82	14	10	3	2	3	370
5 - 8	10	2	4	.	3	2	19	51	312	534	192	50	57	47	43	34	1366
3 - 5	34	24	14	11	19	68	125	175	343	396	205	81	94	109	122	87	1927
1 - 3	53	44	52	60	145	305	369	266	268	225	179	165	161	195	173	109	2861
< 1	24	17	39	35	74	76	77	70	83	56	39	42	28	43	22	23	794
TOTAL	122	87	109	106	242	451	592	566	1132	1359	699	352	350	397	362	256	7336
PERCENT	2	1	2	2	3	6	8	8	15	19	10	5	5	5	5	4	100
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL

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TERRESTRIAL WILDLIFE STUDIES

AQUATIC STUDIES

TERRESTRIAL VEGETATION STUDIES

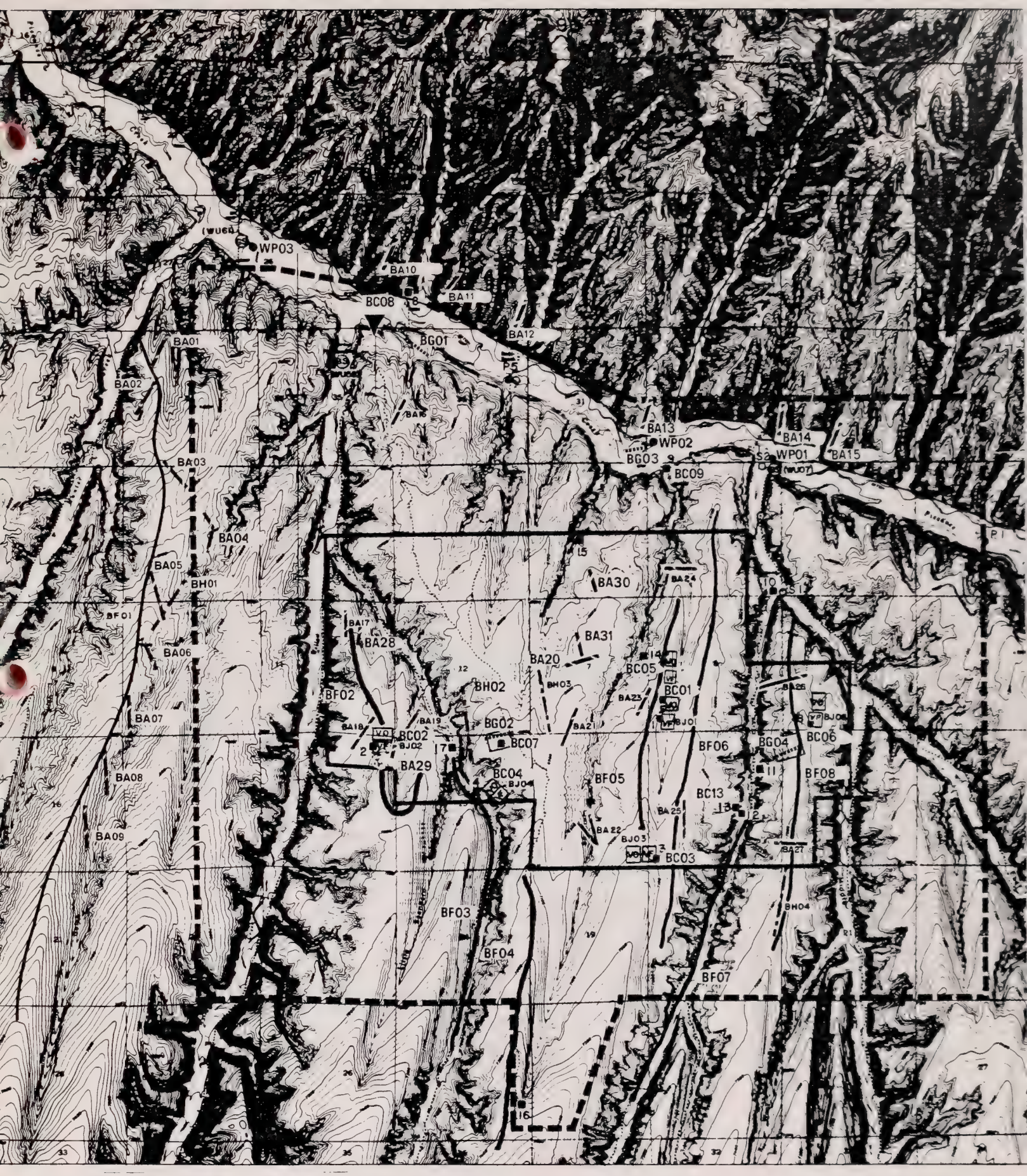
BIOLOGY

BIOLOGICAL DEVELOPMENT MONITORING STUDIES

TRACT C-b

TABLE OF CONTENTS

BIOLOGY



- Water Gaging Station - Benthos
- Vegetation Site: VO = Open (50 x 70 m), VF = Fenced (50 x 70 m)
- Microenvironmental Station
- Fish Sampling
- Periphyton
- Animal Trap Site
- Deer Pellet and Browse Utilization Transects
- Ornithological Gamebird Study Transects
- Predator Survey Lines
- Other Sensitive Areas

BIOLOGICAL DEVELOPMENT MONITORING PROGRAM

Figure II C-1

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TERRESTRIAL WILDLIFE STUDIES

AQUATIC STUDIES

TERRESTRIAL VEGETATION STUDIES

SOIL SURVEY & PRODUCTIVITY ASSESSMENT

II C-1 TERRESTRIAL WILDLIFE STUDIES

Introduction

Data were gathered from November, 1978 through April, 1979. Discussion of the tabuler data contained in this section will be restricted to a brief description of the methods used.

Scope of Work

During the period of this report road counts, road kill counts, and age class composition surveys were conducted for mule deer. No other studies of big game and no studies of small mammals, lagamorphs, or avifauna are reported for this period.

Methods

Mule Deer Road Counts

Mule deer road counts were conducted in the same manner as during baseline studies. A 41-mile length of road was driven (from Rio Blanco Store to Highway 64) and all deer observed were recorded within one-mile intervals. All counts were made during late evenings.

Road Kills

Mule deer road kill counts were conducted along the same 41 mile length of road as the mule deer road counts. The method used was described in the monitoring plan. The dead deer were aged, sexed and tagged.

Age Class Composition of Deer

Age class estimates of deer were obtained by observations of deer in the agricultural meadows near Piceance Creek during November 1978 and April 1979.

Results

Mule Deer Road Counts

Mule deer road count data are presented in Table II C-1 showing large concentrations of deer between Stewart Gulch and Rock School.

Road Kills

Road kill data are presented in Table II C-2 showing deer killed along the entire length of the 41-mile road.

Age Class Composition of Deer

Age class composition data of deer wintering near Trace C-b are presented in Table II C-3.

Table II C-1

MULE DEER ROAD COUNTS CONDUCTED FROM FALL 1978 TO SPRING 1979

* MILE INTERVAL		SEPT. 28	OCT. 5	12	19	26	NOV. 2	9	16	22	30	DEC. 7	14	21	28	JAN. 4	11	18	24	FEB. 2	8	15	23	MAR. 1	8	15	23	29	APR. 5	12	19	26	MAY 3	10	17	24	MILE INTERVAL
0	Rio Blanco Store				2																			2					2								0
1														10			1	4				11	2	36													1
2			2			4							2	8				1			11	11	15	27													2
3			3									2										3	2	1													3
4						1						5	2	10		2		3	2			35		3					5								4
5														7								9	9	23	2		5										5
6			2										1			1			2	1	11	21	11	15	1	9	7		4	1							6
7			2									2	1		11	23	14	24	6	18	35	91	40	44	16	22	7		7	1							7
8			5		2							3	8		1	2	11	7	3	25	25	75	64	61	75	28	9	19	11	21	20	31					8
9		7	6	4	5	6						17	42	17	18	38	15	27	32	20	16	28	37	39	14	25	13	15	29	23	21	12					9
10					7	7				4		7	1		1	31	18	9	13	8	36	57	51	43	4		12	14	40	16	4	30					10
11					8	8							3			14	10	10	15	8	13	32	47	39	12	3	12	20	17	16	31	17	5	18			11
12						10	9	2					13	26	3	41	19	27	25	46	38	103	42	12	16	11	24	13	108	29	122	87	36			2		12
13						3	3						1	23		20	6	2		22	39	51	53	7	14	1	34	26	8	19	43	88	9	25			13
14							2						2	3		6		8		8	3	29	42	8	2	2	12				49	77					14
15						9	8						1					2	5	5	5	3	9	19		12	8		5	6	3	19					15
16						9	21							1		3	4	24	7	3	7	20	8	37	7	8	8	1	22	8	42	54	9	3			16
17		2	46	4	42	27	19		6	19						5		6	1	13	2	30	22	8	13	10	36	14	45	15	54	42	8				17
18			29	56	89	184	11	2	7	31			8	21	7	14		13	5	11	23	39	22	29	20	23	68	45	119	32	89	101	13				18
19			9	29	26	40	18	11	25	9	2	10		16	6	11	8	3	2	11	2	1	29	4	3	8	6	39	80	25	51	29	19	9	3		19
20					12	10	3		1		2					5					4	11	4	5	6	4	2	30	68	37	142	126	61	26	3		20
21				9	24	38	5		15	23	3	2	9		2	13	14	6		1	8	4	16		13	18	28	3	28	12	72	26	29				21
22			2		16	30	22	12		14		1	4	5	4	17	10	22	8	20	17	7	3	14	12	15	46	60	94	65	133	83	50	8			22
23					10		9	12	4	3		4	7		17		7		6	3	15		5	1	14		14	29	44	17	27						23
24	Rock School			24		37			9	4	1	9	20	22	5	40	20	22	9	17	23	16	25	38	8	1	10	8	10	4	13	19	14	3			24
25					27		4		1				3	6	11	7	15	11	4	2		21	7	17	6	10	41	38	182	52	66	40	37	15	9		25
26					1	22								2								3	5		8		19	14	4	32	83	11	9			26
27						9				2											10	12	27	46	1		4		78	31	82	65	43	35	1		27
28						13	6		2		6							1	4			10	11	3	5	5	7	11	62	9	70	50	35	4	7		28
29						8		1										4			12		7	36	10	8	37	61	163	53	167	46	47				29
30						19			14	10				2								3	15		8	2	17	2	69	3	54	5	13				30
31						14		5	13		5	4	10		3	1	2	7		11			6		12	1	60	44	88	23	121	39	71				31
32						3								1					1					16		7	7	8	71	11	41	13	29				32
33						3			2								1				10		3	4				23	49	11	98	30	26				33
34																							6		1				4								34
35						7							4														17		26		42		4				35
36																			7				25	5			44		22		2						36
37													7		6	4					15		33	7	38	16	55		31	3							37
38													5	4	9	3				3	3	5	42	9	17	22	31		14								38
39													4	3	2	5	1			3	7	18	19	2	18		12		62	9	13	2					39
40						27			42				8	1	1				2	2	7	1	1				12		79		98		37	2			40
41	White River City							3								2	3				12		4														41
TOTAL		9	10	6	12	6	25	2	59	6		11	1	48		14	1	11	9	19	6	6	16	6	18	8	10	7	30	8	17	9	24	3	15	9	26	1	4	0	9	7	6	0	7	6	9	5	6	0	3	7	6	2	7	1	7	0	5	5	4	2	4	7	4	4	5	7	0	13	8	0	12	14	60	5	15	7	23	2	= 13815	

* Refer to Section IV C for corresponding four-digit computer station codes.

Table II C-2

MULE DEER ROAD KILL SUMMARY FROM FALL 1978 TO SPRING 1979

MILE INTERVAL		SEPT.	OCT.				NOV.					DEC.				JAN.				FEB.				MAR.					APR.				MAY				MILE INTERVAL
		28	5	11	19	26	2	9	16	22	30	7	14	21	28	4	11	18	26	2	8	15	23	2	8	15	23	29	5	12	19	27	3	10	17	24	
0	Rio Blanco Store																																				0
1														1							1																1
2			1											1																							2
3																									1												3
4									1																												4
5																																					5
6									1									1		2	1				1													6
7																									2	1											7
8																						2			2												8
9							1							1								1									1							9
10																				1		1			3												10
11																					1			1			1										11
12																		1			1	1		1	1	1											12
13																						1		1	2	1											13
14														1								1		2	2	1											14
15														1																1		1					15
16														1								1									1						16
17								1															1		4	1		1						1	1		17
18								1		1															2			1			1						18
19						2		1														1			1	1	1				1						19
20					1																				2	1											20
21																									1	1			1								21
22										1												1															22
23					1																	1														23
24	Rock School									1														1		1						1					24
25																															1	1					25
26																															1						26
27																																					27
28					1																									1	1					28
29																								1	1						1						29
30										2																											30
31								2																		1											31
32									2																												32
33																										2											33
34																																					34
35							1																			1											35
36																				*																	36
37																								2		2											37
38																														1							38
39																																					39
40									1							1																					40
41	White River City																			1																	41
TOTAL		0	1	0	3	2	2	5	5	5	0	0	0	4	2	1	0	0	2	0	5	5	10	9	25	15	2	2	3	3	7	4	0	1	1	0	= 124

* One elk killed at Yellow Creek Road on February 8, 1979.

Refer to Section IV C for corresponding four-digit computer station codes.

Table II C-3

Age class composition of mule deer wintering near Tract C-b

Date	Fawns	Does	Bucks	Adults	Fawns/ 100 Does	Bucks/ 100 Does	Fawns/ 100 Adults
13-27 Nov. 1978	151	159	35	194	95	22	77.8
20-26 Apr. 1979	41			343			12.0

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AQUATIC STUDIES

TERRESTRIAL VEGETATION STUDIES

SOIL SURVEY & PRODUCTIVITY ASSESSMENT

II C-2 AQUATIC STUDIES

No additional aquatic studies have been completed during this report period. All completed studies have been previously reported.

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TERRESTRIAL VEGETATION STUDIES

SOIL SURVEY & PRODUCTIVITY ASSESSMENT

II C-3 TERRESTRIAL VEGETATION STUDIES

Introduction

The terrestrial vegetation studies are designed to: detect changes in the structural and compositional characteristics of the major plant communities, measure productivity and utilization, and observe general vegetation conditions.

Scope of Study

Community structure and composition are sampled on a three-year rotational sampling cycle in each of the six extensive study plots established in the four major vegetation types.

Herbaceous productivity and utilization is sampled once each year in four exclosure locations and 65 range cages.

Methods

"Community structure and composition"

Two control and two development plots will be sampled utilizing the existing intensive study plots in the two major habitat types on the Tract i.e., chained pinyon-juniper (CPJ) rangeland, pinyon-juniper (PJ) woodland. These study plots will allow comparisons of possible developmental effects between control and developmental plots, plus baseline comparisons. One upland sagebrush and one bottomland sagebrush control site will also be monitored and compared to baseline data.

Sampling at these study sites will be carried out on a three-year rotational basis; each plot will be sampled every three years, two plots each year (CPJ in 1978, PJ in 1979 and sagebrush in 1980).

Parameters are monitored by repeated sampling of permanently located herb quadrats and line transects, and by repeated measurement of marked trees at permanently located study sites. Sampling employs the same methods used during baseline investigations. Shrub frequency, density, and cover are measured using 20 4x10 m belt transects (Lindsey, 1955), per plot. Herb frequency and cover will be measured using 25 1-m^2 (one centare) quadrats per site; cover by litter, soil, rock, lichens, mosses, and woody seedlings will also be measured in these quadrats. Sampling of trees in the woodland sites will include canopy cover by vertical projection (dizzy stick method).

"Herbaceous Productivity and Utilization"

During the developmental monitoring period, two control and two development sites (pinyon-juniper and chained pinyon-juniper) are used to evaluate herbaceous production. The bottomland and upland sagebrush sites are control sites; no developmental sites exist due to the lack of development in these vegetation types. Therefore, herb productivity will not be sampled at these intensive study sites. At each site an area 50 meters on a side is fenced with three-strand barbed wire prior to the onset of growth in the spring. Clipping will be accomplished once during the growing season at time of estimated peak standing crop. At this date, the current live fraction in ten 1 m^2 plots will be clipped according to major vegetation fractions. Additionally, ocular estimates of standing crop will be made in the clipped plots as well as in 40 additional 1 m^2 quadrats. The clipped weights will be compared to estimated weights from the same plots and a correction factor will be derived from the additional 40 1 m^2 quadrats. A total of 40 1 m^2 quadrats will be clipped and estimated (10 clips/site x 4 sites) and 160 1 m^2 quadrats will be only estimated at the four intensive study sites (control and developmental sites in pinyon-juniper and chained pinyon-juniper). Productivity and utilization from the fenced or exclosure areas can be compared to the first three years of monitoring data that were obtained from these same areas. Cattle fences will be removed at the end of the growing season and will be re-established in a slightly different location (but still in the same vegetation types and general area) the following spring.

In order to evaluate the variation of production throughout the Tract and obtain data for the bottomland and upland sagebrush communities, a second approach is used. A total of 40 range cages are randomly located in the major vegetation types on the Tract: pinyon-juniper woodland and chained rangeland, upland sagebrush and bottomland sagebrush. At the time of estimated peak standing crop, a 1 m^2 area is clipped from the area excluded by each range cage to determine production. These clips are divided into the same major vegetation fractions used during baseline. An additional replicate of 40 samples to determine utilization are taken from unexclosed areas lying close to the sampled range cages.

Another 20 range cages are placed in the south-facing pinyon-juniper woodlands located north of Piceance Creek (an area most likely to be exposed to air emissions). Ten cages are placed in areas of anticipated developmental influences and ten in control areas. Each cage is large enough to accomodate a 1 m^2 quadrat. A replicate of 20 1 m^2 quadrats in adjacent open areas is used to determine utilization. These areas have not been sampled for herbaceous production and utilization previously and these studies are conducted during the 1978 growing season. Following this baseline, the study will become system dependent and may only be used after retorting and SO_2 emissions begin.

Two different vegetation types were fertilized on Tract, using two fertilizer treatments per vegetation type. (See Figure II C-2.) To test the degree of influence of the fertilizer treatments, a range cage was placed in each treatment site and one cage used as a control. (The control for the other site is the cattle exclosure at the adjacent intensive study site.)

These five cages are clipped to determine production, and a replicate of five 1 m^2 quadrats in adjacent open areas is clipped to determine utilization. All clips are divided into the major vegetational fractions mentioned previously.

Results

Results and analysis of these data were presented in the 1978 C-b Annual Report. The data were also presented in that report but are repeated here for reference.

LIST OF TABLES AND FIGURES

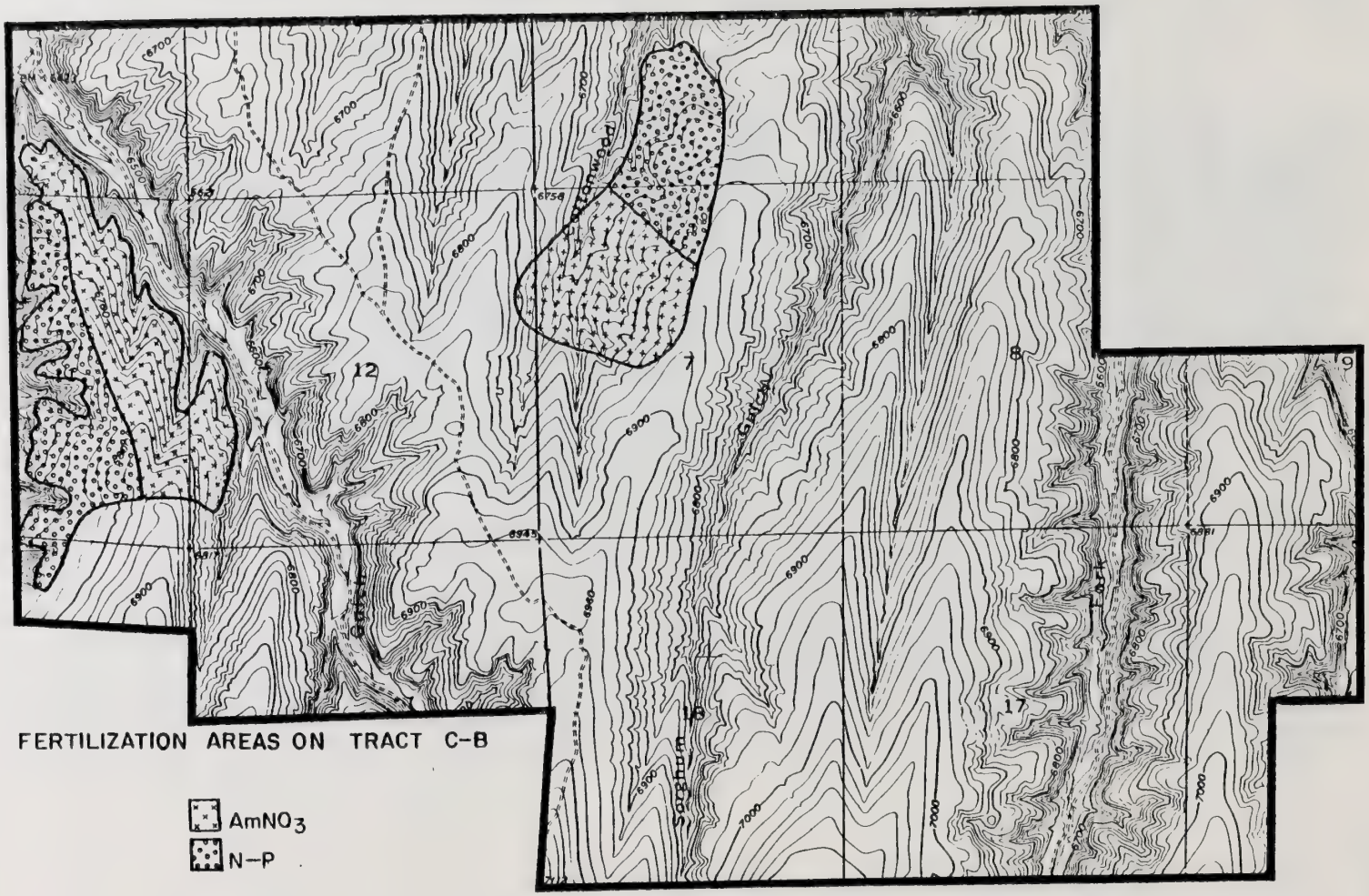
FERTILIZATION AREAS ON TRACT C-B
AmNO3
N-P
12
7
8
9
18
17
Gibson
Goodnight
Pleasant
Southern
Ute

FIGURE II C-2

Table II C-4

Production values (oven dry weights in grams/m^2) from range cages and open plots for fertilized and non-fertilized areas on the Ridge above Cottonwood Gulch and Scandard Ridge. 1978.

	Ridge Above Cottonwood Gulch		Scandard Ridge	
	Fenced Plot	Open Plot	Fenced Plot	Open Plot
Fertilized with Ammonium Nitrate and Phosphorus				
Agropyron smithii	18.076	15.575		
Bromus tectorum			45.251	46.747
Oryzopsis hymenoides	28.119	30.727	9.189	33.980
Other perennial grasses	26.872	6.874	0.206	1.179
Perennial forbs	8.092	5.039	0.005	4.639
Annual forbs			0.157	0.088
Total biomass	81.159	58.215	54.808	86.633
Fertilized with Ammonium Nitrate				
Agropyron smithii	10.152	15.163	0.205	
Bromus tectorum		6.055		
Oryzopsis hymenoides		0.923	0.236	
Other perennial grasses	73.040		25.243	27.770
Perennial forbs			0.801	1.480
Annual forbs		6.691		0.675
Total biomass	83.192	28.832	26.485	29.925
Not Fertilized				
Agropyron smithii	11.314	5.466	7.854	
Bromus tectorum	0.158	0.670	0.092	0.707
Oryzopsis hymenoides				
Other perennial grasses	51.343	0.840	17.839	28.442
Perennial forbs	6.284	5.299	4.028	
Annual forbs	0.129	0.154		0.256
Half shrubs		0.128		
Total biomass	69.228	12.557	29.813	29.405

Table II C-5

Herb quadrat summaries for Plot 1-0. Based on data from 25 permanently located quadrats. June 1978. Values in percents. "?" indicates uncertain identification. ± Values are equal to the standard error of the mean.

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Agoseris glauca	0.1	0.01	0-1	16
Agropyron desertorum	3.6	0.25	0-20	40
Agropyron smithii	1.7	0.12	0-15	52
Antennaria rosea	0.7	0.05	0-6	20
Arabis holboellii	0.1	0.01	0-1	8
Artemisia ludoviciana	0.4	0.03	0-6	12
Aster fendleri	<0.1	<0.01	0-<1	4
Bouteloua gracilis	0.6	0.04	0-15	8
Bromus tectorum	0.8	0.06	0-3	88
Carex pennsylvanica	0.3	0.02	0-4	20
Chaenactis douglasii	0.1	0.01	<1-1	24
Chenopodium album	<0.1	<0.01	0-<1	12
Cryptantha sp.	0.1	0.01	<1-1	16
Descurainia pinnata	<0.1	<0.01	0-<1	8
Euphorbia robusta	<0.1	<0.01	0-<1	3
Festuca brachyphylla (?)	0.2	0.02	0-6	8
Gayophytum ramocissimum	<0.1	<0.01	0-<1	32
Ipomopsis aggregata	<0.1	<0.01	0-<1	4
Lappula redowskii	0.1	0.01	0-1	12
Lepidium densiflorum	<0.1	<0.01	0-<1	4
Lomatium orientale	<0.1	<0.01	0-<1	8
Lupinus argenteus	<0.1	<0.01	0-<1	4
Mentzelia dispersa	0.1	0.01	0-1	12
Oryzopsis hymenoides	3.2	0.22	0-15	76
Phlox longifolia	<0.1	<0.01	0-<1	8
Poa fendleriana	0.1	0.01	0-3	4
Polygonum sawatchense	<0.1	<0.01	0-<1	28
Sitanion longifolium	0.4	0.03	0-2	32
Stipa comata	1.6	0.11	0-9	28
Townsendia sericea	<0.1	<0.01	0-<1	4
Unknown grass	0.1	0.01	0-3	4
Artemisia tridentata	<0.1	<0.01	0-<1	20
Gutierrezia sarothrae	0.2	1.10	0-2	20
Pinus edulis			0-<1	4
Total Herb	12.3		1-30	100
Total Woody	0.2		0-2	40
Mosses	0.3		0-5	12
Crustose Lichen	1.0		0-10	40
Litter	76.0		8-100	100
Bare Soil	21.4		0-89	96
Rock	2.5		0-25	56

Mean No. of Herb Species per m^2 = 6.32 ± 0.55
Mean No. of Species per m^2 = 6.56 ± 0.55

Table II C-6

Herb quadrat summaries for Plot 1-F. Based on data from 25 permanently located quadrats. June 1978. Values in percents. "?" indicates uncertain identification. ±Values are equal to the standard error of the mean.

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Agoseris glauca	0.1	0.38	0-1	12
Agropyron dasystachyum	0.3	1.54	0-5	8
Agropyron desertorum	4.2	20.35	0-30	44
Agropyron smithii	0.8	3.65	0-11	16
Antennaria parvifolia	<0.1	<0.01	0-<1	8
Antennaria rosea	0.1	0.58	0-2	12
Arabis holboellii	<0.1	<0.01	0-<1	8
Artemisia ludoviciana	0.1	0.19	0-1	4
Aster fendleri	0.2	0.96	0-4	16
Astragalus ceramicus	0.1	0.19	0-1	32
Bromus tectorum	0.6	2.69	0-5	68
Carex pennsylvanica	0.3	1.34	0-4	12
Chaenactis douglasii	<0.1	<0.01	0-<1	4
Chenopodium album	<0.1	<0.01	0-<1	12
Collinsia parviflora	0.0	0.19	0-1	4
Cryptantha sp.	<0.1	<0.01	0-<1	4
Delphinium nelsoni	0.0	0.19	0-1	4
Descurainia pinnata	<0.1	<0.01	0-<1	8
Draba reptans	<0.1	<0.01	0-<1	4
Erigeron nematophyllus	0.1	0.19	0-1	4
Festuca brachyphylla (?)	0.4	2.11	0-6	20
Gayophytum ramocissimum	<0.1	<0.01	0-<1	8
Haplopappus nuttallii	0.2	1.15	0-4	12
Koeleria gracilis	2.0	9.79	0-14	28
Lappula redowskii	0.3	1.34	0-5	20
Lepidium densiflorum	<0.1	<0.01	0-<1	4
Mentzelia dispersa	0.2	1.15	0-6	8
Microsteris micrantha	<0.1	<0.01	0-<1	4
Oryzopsis hymenoides	7.4	35.51	0-45	84
Phlox hoodii	1.1	5.18	0-8	36
Physaria floribunda	0.1	0.19	0-1	8
Poa fendleriana (?)	1.0	4.80	0-12	24
Polygonum sawatchense	<0.1	<0.01	0-<1	8
Senecio multilobatus	0.1	0.38	0-2	8
Sitanion longifolium	0.5	2.50	0-5	40
Stipa comata	0.1	0.58	0-3	8
Taraxacum officinale	<0.1	<0.01	0-<1	4
Tragopogon dubius	0.1	0.19	0-1	4
Zigadenus venenosus	<0.1	<0.01	0-<1	4

Table II C-6 (Continued)

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Artemisia tridentata	<0.1	<0.01	0-<1	12
Chrysothamnus nauseosus	<0.1	<0.01	0-<1	4
Gutierrezia sarothrae	0.6	2.69	0-5	16
Total Herb	18.9		1-55	100
Total Woody	0.6		0-5	44
Mosses	0.1		0-1	4
Crustose Lichen	0.2		0-5	16
Litter	77.8		20-99	100
Bare Soil	20.8		0-80	96
Rock	1.4		0-30	12

Mean No. of Herb Species per m^2 = 6.48 ± 0.69
Mean Total No. of Species per m^2 = 6.64 ± 0.68

Table II C-7

Herb quadrat summaries for Plot 2-0. Based on data from 25 permanently located quadrats. June 1978. Values in percents. "?" indicates uncertain identification. Values are equal to the standard error of the mean.

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Agoseris glauca	0.1	0.24	0-1	4
Agropyron desertorum	3.8	22.82	0-16	36
Agropyron smithii	0.8	5.10	0-12	16
Antennaria rosea	<0.1	<0.01	0-<1	4
Artemisia ludoviciana	0.1	0.24	0-1	4
Aster fendleri	0.1	0.73	0-2	24
Aster glaucodes (?)	0.2	1.21	0-5	4
Astragalus ceramicus	<0.1	<0.01	0-<1	4
Bouteloua gracilis	0.4	2.43	0-9	12
Bromus tectorum	4.7	28.64	0-15	96
Carex pennsylvanica (?)	1.2	7.28	0-30	4
Chenopodium album	<0.1	<0.01	0-<1	16
Crepis acuminata	0.1	0.24	0-1	8
Descurainia pinnata	<0.1	<0.01	0-<1	8
Festuca brachyphylla (?)	0.4	2.67	0-6	16
Gayophytum ramocissimum	0.1	0.73	0-1	48
Heterotheca villosa	1.2	7.28	0-30	4
Koeleria gracilis	0.5	3.16	0-8	8
Lappula redowskii	0.2	1.21	0-3	40
Lepidium montanum	<0.1	<0.01	0-<1	4
Microsteris micrantha	<0.1	<0.01	0-2	16
Oenothera trichocalyx	<0.1	<0.01	0-<1	4
Oryzopsis hymenoides	0.2	0.97	0-2	16
Phlox longifolia	0.5	2.91	0-10	12
Poa sp.	0.1	0.49	0-1	8
Polygonum sawatchense	<0.1	<0.01	0-<1	16
Salsola iberica	<0.1	<0.01	0-<1	8
Sisymbrium altissimum	0.2	0.97	0-4	4
Sisymbrium officinale	0.1	0.24	0-1	4
Sitanion longifolium	1.1	6.55	0-8	44
Sphaeralcea coccinea	0.1	0.49	0-2	4
Taraxacum officinale	0.1	0.49	0-2	4
Tragopogon dubius	<0.1	<0.01	0-<1	4
Unknown composite	0.2	1.21	0-5	4
Unknown mustard	0.1	0.49	0-2	8
Artemisia tridentata	0.2	1.21	0-2	28
Chrysothamnus nauseosus	<0.1	<0.01	0-1	24

Table II C-7 (Continued)

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Total Herbs	15.8		1-35	100
Total Woody	0.4		0-2	36
Mosses	0.1		0-3	4
Crustose Lichen	0.1		0-2	20
Litter	82.4		45-100	100
Bare Soil	15.9		0-45	84
Rock	1.6		0-25	24

Mean No. of Herb Species per m^2 = 5.04 ± 0.45
Mean Total No. of Species per m^2 = 5.56 ± 0.49

Table II C-8

Herb quadrat summaries for Plot 2-F. Based on data from 25 permanently located quadrats. June 1978. Values in percents. "?" indicates uncertain identification. (± values are equal to the standard error of the mean).

Species	Mean Cover	Relative Cover	Range of Cover Values	Frequency
Agoseris glauca	0.1	0.54	0-1	8
Agropyron dasystachyum	5.7	38.69	0-35	44
Agropyron desertorum	0.8	5.45	0-20	4
Agropyron smithii	0.6	4.36	0-6	24
Antennaria rosea	0.2	1.09	0-4	4
Aster fendleri	0.1	0.54	0-2	16
Astragalus ceramicus	<0.1	<0.01	0-<1	4
Astragalus diversifolius	0.1	0.27	0-1	4
Bouteloua gracilis	0.2	1.63	0-3	16
Bromus tectorum	2.7	18.53	0-20	76
Calochortus nuttallii	<0.1	<0.01	0-<1	4
Chenopodium album	<0.1	<0.01	0-<1	20
Erysimum asperum	<0.01	<0.01	0-<1	4
Festuca brachyphylla (?)	0.1	2.18	0-3	16
Gayophytum ramocissimum	0.1	0.82	0-1	32
Koeleria gracilis	0.6	3.81	0-9	12
Lappula redowskii	0.1	0.27	0-1	12
Lomatium grayi	0.1	0.27	0-1	4
Mentzelia dispersa	<0.1	<0.01	0-<1	4
Microsteris micrantha	<0.1	<0.01	0-<1	4
Phlox longifolia	0.1	0.27	0-1	8
Poa fendleriana	0.4	3.00	0-6	8
Poa pratensis	0.1	0.82	0-3	4
Polygonum sawatchense	<0.1	<0.01	0-<1	20
Oryzopsis hymenoides	0.9	5.99	0-5	24
Sitanion longifolium	1.0	7.08	0-7	36
Sphaeralcea coccinea	0.1	0.54	0-1	8
Stipa comata	0.2	1.63	0-6	4
Unknown mustard	<0.1	<0.01	0-4	4
Artemisia tridentata	0.2	1.63	0-3	44
Chrysothamnus nauseosus	0.1	0.27	0-1	12
Pinus edulis	0.1	0.27	0-1	4
Purshia tridentata	<0.1	<0.01	0-<1	4
Total Herb	12.6		1-40	100
Total Woody	0.3		0-3	56
Mosses	0.4		0-5	8
Crustose Lichen	0.6		0-8	20
Litter	81.8		25-100	100
Bare Soil	16.6		0-75	76
Rock	1.7		0-14	32

Mean No. of Herb Species per m^2 = 4.36±0.44
Mean Total No. of Species per m^2 = 4.96±0.46

Table II C-9

Frequency, mean cover, and relative cover values for shrub species in plot 1-O, 1974-1978. Based on data from 20 10m x 4m line strip transects.

Species	Frequency (%)			Mean Cover (%)			Relative Cover (%)		
	1974	1976	1978	1974	1976	1978	1974	1976	1978
Amelanchier spp.	40	30	35	0.3	0.3	0.4	2.1	1.9	2.3
Artemisia tridentata	100	100	100	9.6	10.3	9.6	66.8	58.5	64.0
Cercocarpus montanus	65	65	70	0.4	0.3	0.2	3.1	1.9	1.1
Chrysothamnus nauseosus	30	45	40	0.4	0.2	0.2	2.8	1.2	1.0
Chrysothamnus viscidiflorus	5	15	15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Juniperus osteosperma	40	35	45	0.6	0.4	2.0	3.8	2.3	13.1
Juniperus scopulorum	5	15		1.0	1.4		6.6	7.9	
Opuntia polyacantha	20	10	35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pinus edulis	55	70	75	0.8	1.6	1.2	5.5	9.2	8.1
Purshia tridentata	65	80	75	1.2	1.9	1.1	8.3	10.9	7.4
Symphoricarpos oreophilus	30	30	40	0.2	0.2	0.4	1.0	0.8	2.9
Total				14.5	16.6	15.1			

Table II C-10

Frequency, mean cover, and relative cover values for shrub species in plot 1-F, 1974-1978. Based on data from 20 10m x 4m line strip transects.

Species	Frequency (%)			Mean Cover (%)			Relative Cover (%)		
	1974	1976	1978	1974	1976	1978	1974	1976	1978
Amelanchier spp.	10	10	15	0.6	0.8	0.7	6.6	6.3	7.0
Artemisia tridentata	80	80	100	5.3	7.4	6.4	58.6	58.6	61.7
Cercocarpus montanus	50	55	50	0.1	0.1	0.2	1.1	0.7	1.9
Chrysothamnus nauseosus	50	50	55	1.4	1.5	1.3	15.5	12.1	12.5
Chrysothamnus viscidiflorus	5	5		<0.1	<0.1		<0.1	<0.1	
Juniperus osteosperma	25	20	40	0.2	0.2	0.4	2.2	1.7	3.7
Juniperus scopulorum	5	5		<0.1	0.1		<0.1	1.0	
Opuntia polyacantha	10		20	<0.1		<0.1	<0.1		<0.1
Pinus edulis	25	25	25	0.2	0.2	0.3	2.8	1.9	2.6
Purshia tridentata	50	65	55	0.6	1.6	1.0	6.6	12.5	9.5
Symphoricarpos oreophilus	20	20	35	0.1	<0.1	0.1	1.1	<0.1	1.1
Total				8.5	11.9	10.4			

Table II C-11

Frequency, mean cover, and relative cover values for shrub species in plot 2-0, 1974-1978. Based on data from 20 10m x 4m line strip transects.

Species	Frequency (%)			Mean Cover (%)			Relative Cover (%)		
	1974	1976	1978	1974	1976	1978	1974	1976	1978
Amelanchier spp.	20	10	10	0.2	0.6	0.7	3.7	7.4	7.8
Artemisia tridentata	50	50	75	0.3	0.9	1.7	5.5	12.0	19.2
Cercocarpus montanus	25	25	25	0.3	0.2	0.2	5.5	1.9	2.5
Chrysothamnus nauseosus	85	90	95	2.6	3.4	4.2	46.7	42.8	46.9
Chrysothamnus viscidiflorus	5	10		<0.1	<0.1		<0.1	<0.1	
Juniperus osteosperma	50	60	60	1.3	1.2	0.9	23.9	15.6	10.6
Opuntia polyacantha	35		20	<0.1		<0.1	<0.1		<0.1
Pinus edulis	65	60	60	0.8	0.5	0.3	13.8	5.9	3.7
Purshia tridentata	20	25	35	<0.1	0.6	0.4	<0.1	7.0	4.6
Symphoricarpos oreophilus	10	20	35	0.1	0.1	0.4	0.9	0.8	4.6
Total				5.6	7.5	8.8			

Table II C-12

Frequency, mean cover, and relative cover values for shrub species in plot 2-F, 1974-1978. Based on data from 20 10m x 4m line strip transects.

Species	Frequency (%)			Mean Cover (%)			Relative Cover (%)		
	1974	1976	1978	1974	1976	1978	1974	1976	1978
Amelanchier spp.	30	10	10	<0.1	<0.1	<0.1	0.5	<0.1	<0.1
Artemisia tridentata	35	65	70	1.1	1.6	2.6	11.7	11.9	17.7
Artemisia sp.		5			<0.1			<0.1	
Cercocarpus montanus	10	25	20	0.4	0.5	0.5	4.3	3.7	3.8
Chrysothamnus nauseosus	50	70	75	0.6	1.8	1.4	6.9	12.9	9.5
Chrysothamnus viscidiflorus	5	10	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Juniperus osteosperma	70	80	85	2.8	4.0	3.4	30.3	28.9	23.3
Opuntia polyacantha	10		15	<0.1		<0.1	<0.1		<0.1
Pinus edulis	65	65	70	1.2	1.9	1.9	12.2	13.6	12.8
Purshia tridentata	35	55	40	3.2	3.8	4.8	34.1	27.2	32.7
Symphoricarpos oreophilus		30	25		<0.1	0.1		<0.1	0.3
Total				9.3	13.6	14.7			

Table — Density values (No. per hectare) for shrub species at plots 1-0, 1-F, 2-0, and 2-F; chained pinyon-juniper rangeland. Values based on 20 10m x 4m belt transects. Height class 1 = 0.25m - 0.75m; class 2 = 0.76m - 1.50m; class 3 = 1.51m - 2.25m; class 4 = <2.26m. 1974-1978.

	Height Class	Plot 1-0			Plot 1-F			Plot 2-0			Plot 2-F		
		1974	1976	1978	1974	1976	1978	1974	1976	1978	1974	1976	1978
Amelanchier spp.	1	162	99	163	25	25	88	62	49	38	75	25	25
	2	25	49	113	12	12	13	12		25	25	12	13
	3								12				
	4									13			
	Total	187	148	276	37	37	101	74	61	76	100	37	38
Artemisia tridentata	1	2162	2561	2350	988	788	1138	138	151	575	212	388	700
	2	712	1074	1363	600	724	863	62	86	150	50	200	213
	3	12	25	38	12	49	150		12	25		49	63
	4			13			13						
	Total	2886	3661	3764	1600	1561	2164	200	249	735	262	637	976
Artemisia sp.	1											12	
	Total											12	
Cercocarpus montanus	1	262	375	350	138	138	100	38	62	75	50	62	100
	2	88	114	150	112	163	188	25	37	13		12	
	3					49	63	12	25		12	12	
	4								12	13		12	26
	Total	350	489	500	250	363	351	75	124	101	62	99	126
Chrysothamnus nauseosus	1	175	212	138	262	188	200	388	1037	1463	175	262	213
	2	25	12	13	12	62	50	100	225	163	50	114	100
	3									25			
	Total	200	224	151	272	250	250	488	1262	1651	225	376	313

Table II C-13 (Continued)

	Height Class	Plot 1-0			Plot 1-F			Plot 2-0			Plot 2-F		
		1974	1976	1978	1974	1976	1978	1974	1976	1978	1974	1976	1978
Chrysothamnus viscidiflorus	1	12	49	63	12	12		12	25		12	25	13
	Total	12	49	63	12	12		12	25		12	25	13
Juniperus osteosperma	1	75	37	88	38	49	88	75	74	75	200	138	150
	2	62	62	75	50	12	38	162	175	138	225	225	150
	3			50				12	37	50	12	37	88
	4			13							12	25	13
	Total	137	99	226	88	61	126	249	286	263	449	425	401
Juniperus scopulorum	1	25	12		12								
	2	25	25										
	Total	50	37		12								
Opuntia polyacantha	1	100	25	75	125		50	200		35	100		38
	Total	100	25	75	125		50	200		35	100		38
Pinus edulis	1	138	188	163	125	114	150	212	114	138	162	212	188
	2	125	200	125	38	49	38	75	126	75	138	225	113
	3	38	49	63	12	25	13	25	49	50	38	86	125
	4			25			13		12	38			38
	Total	301	437	376	175	188	214	312	301	301	338	523	464
Purshia tridentata	1	588	874	938	225	299	200	88	74	88	225	175	213
	2	12	1000	125	50	212	188	12	37	13	125	249	288
	3						13		12	13			50
	Total	600	1874	1063	275	511	401	100	123	114	350	424	551
Symphoricarpos oreophilus	1	150	262	438	112	62	188	112	99	188		49	125
	2			13		25	38			13		37	50
	Total	150	262	451	112	87	226	112	99	201		86	175

Oven dry weights (grams) for range cages and adjacent open areas in the pinyon-juniper woodland community type. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1	1.513	0.068		17.647	0.418	5.456		25.102
	2	0.281			2.037	0.261			2.579
	3	0.191			7.901	9.377	0.334		17.803
	4			4.931	2.560	0.880			8.371
	5				2.152	2.518			4.670
	6		0.011		3.597	0.188		2.926	6.722
	7				2.188	0.062	0.139		2.389
	8		0.645	8.968	4.483	0.248	0.771		15.115
	9								
	10			2.631		3.148			5.779
RANGE CAGES	1	6.488			55.936	6.000	2.249		70.673
	2			7.909	0.597	3.329			11.835
	3	0.427			7.002	8.197	1.059		16.685
	4			9.988	20.771	1.580	0.015		32.354
	5				12.719	5.970	0.002		18.691
	6				6.657	0.079	0.002		6.738
	7	0.212			6.848	0.222	0.139		7.421
	8				1.002	7.997			8.999
	9								
	10	0.631			10.669	8.034	0.008		19.342

Table II C-15

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the pinyon-juniper woodland community. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	0.862 ± 0.707	9	44	0-6.488
Oryzopsis hymenoides	1.989 ± 1.327	9	22	0-9.988
Other perennial grasses	13.578 ± 5.674	9	100	0.597-55.936
Perennial forbs	4.601 ± 1.121	9	100	0.079-8.197
Annual forbs	0.386 ± 0.260	9	78	0-2.249
Total	21.415 ± 6.705	9	100	6.738-70.673
OPEN AREAS				
Agropyron smithii	0.221 ± 0.165	9	33	0-1.513
Bromus tectorum	0.080 ± 0.071	9	33	0-0.645
Oryzopsis hymenoides	1.837 ± 1.063	9	33	0-8.968
Other perennial grasses	4.729 ± 1.770	9	89	0-17.647
Perennial forbs	1.900 ± 1.006	9	100	0.062-9.377
Annual forbs	0.744 ± 0.595	9	44	0-5.456
Half shrubs	0.325 ± 0.325	9	11	0-2.926
Total	9.837 ± 2.602	9	100	2.389-25.102

Oven dry weights (grams) for range cases and adjacent open areas in the chained pinyon-juniper rangeland community type. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1		10.766	7.433	5.489	3.855	0.460		28.003
	2	0.359	0.166		17.501	5.563	0.068		23.657
	3	11.931		0.699	47.329				59.959
	4	17.499	1.329	49.617	20.729				89.174
	5	3.646		65.528	16.432	0.398			86.004
	6		0.460	4.388	15.209	11.170	0.088		31.315
	7	52.547	0.551		7.339	0.015	0.006		60.458
	8	8.873			30.574	3.852	0.111		43.410
	9		0.058	0.877	30.417	25.785	0.076		57.213
	10								
RANGE CAGES	1	15.961	7.354	1.726	1.564		0.348		26.953
	2	4.816	0.483	7.894	13.087	0.363	0.028		26.671
	3	27.529		74.478	15.095				117.102
	4	6.747		52.070	75.576	9.018			143.411
	5	1.349		3.286	33.656				38.291
	6		0.425	55.143	10.048	4.145			69.761
	7	19.576	0.017	0.181	20.069	6.500	0.640		46.983
	8	9.696			59.015	1.014	0.147		69.872
	9	0.444			24.491	7.880			32.815
	10								

Table II C-17

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the chained pinyon-juniper rangeland. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	9.569 ± 3.198	9	89	0-27.529
Bromus tectorum	0.920 ± 0.807	9	44	0-7.354
Oryzopsis hymenoides	21.642 ± 9.972	9	78	0-74.478
Other perennial grasses	28.067 ± 8.116	9	100	1.564-75.576
Perennial forbs	3.213 ± 1.242	9	67	0-9.018
Annual forbs	0.129 ± 0.075	9	44	0-0.640
Total	63.540 ± 13.885	9	100	26.671-143.411
OPEN AREAS				
Agropyron smithii	19.428 ± 10.358	9	67	0-52.547
Bromus tectorum	1.481 ± 1.169	9	67	0-10.766
Oryzopsis hymenoides	14.282 ± 8.330	9	67	0-65.528
Other perennial grasses	21.224 ± 4.357	9	100	5.489-47.329
Perennial forbs	5.626 ± 2.803	9	78	0-25.785
Annual forbs	0.090 ± 0.049	9	67	0-0.460
Total	53.244 ± 7.964	9	100	23.657-89.174

Oven dry weights (grams) for range cages and adjacent open areas in the upland sagebrush community type. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1	1.513			24.274	8.691		46.447	80.925
	2	1.981			13.875	0.105	0.005		15.966
	3	7.975	1.387	0.021	13.936	0.155	0.008		23.482
	4	29.125	0.807	1.765	28.673	2.886			63.256
	5	15.313	0.003		11.507	11.194	0.068		38.085
	6	4.252			81.377	6.931	0.023		92.583
	7	3.179	0.317		54.047	0.138	0.004		57.685
	8	9.584			11.209	4.420	0.123		25.336
	9	3.735			17.336	3.709		6.992	31.772
	10	13.852	0.192		27.445	1.178			42.667
RANGE CAGES	1				69.652	13.926	1.807	54.519	139.904
	2	3.143		2.443	25.071	0.191			30.848
	3	30.171			74.087	3.358	0.829		108.445
	4	18.072			34.241	0.499	0.003		52.815
	5	16.777			17.931	7.189			41.897
	6	12.633			43.941	1.258			57.832
	7	2.575			80.774	1.905	0.072		85.326
	8	23.282			23.215	0.281	0.270		47.048
	9	0.508			39.421	8.877			48.806
	10	12.916			41.559	12.853			67.328

Table II C-19

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the upland sagebrush community. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	12.008 ± 3.269	10	90	0-30.171
Oryzopsis hymenoides	0.244 ± 0.244	10	10	0-2.443
Other perennial grasses	44.989 ± 7.069	10	100	17.931-80.774
Perennial forbs	5.034 ± 1.677	10	100	0.191-13.926
Annual forbs	0.298 ± 0.187	10	50	0-1.807
Half shrubs	5.452 ± 5.452	10	10	0-54.519
Total	68.025 ± 10.703	10	100	30.848-139.904
OPEN AREAS				
Agropyron smithii	9.051 ± 2.706	10	100	1.513-29.125
Bromus tectorum	0.271 ± 0.148	10	50	0-1.387
Oryzopsis hymenoides	0.179 ± 0.176	10	20	0-1.765
Other perennial grasses	28.368 ± 7.154	10	100	11.209-81.377
Perennial forbs	3.941 ± 1.232	10	100	0.105-11.194
Annual forbs	0.023 ± 0.013	10	60	0-0.123
Half shrubs	5.344 ± 4.620	10	20	0-46.447
Total	47.176 ± 8.112	10	100	15.966-92.583

Oven dry weights (grams) for range cages and adjacent open areas in the bottomland sagebrush community type. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1	1.144	2.566		12.138	7.799	11.485		35.132
	2	3.089	1.337		0.379				4.805
	3	9.624	5.012		0.299	5.288	1.405		21.628
	4		4.688		9.339		0.057	0.889	14.973
	5		1.714		0.702	2.219	0.849		5.484
	6		10.539						10.539
	7	2.203	3.954			0.249	0.123		6.529
	8	1.126	0.610	17.927	14.579	1.922	0.044		36.208
	9	0.522	2.992		2.902	0.338	0.086		6.840
	10	0.328	22.758			0.022	0.480		23.588
RANGE CAGES	1		8.863		15.956	16.439	0.074		41.332
	2	15.629			8.588		0.334		24.551
	3	14.435	3.691		0.029	28.408	5.202		51.765
	4		25.903		1.057	16.089	2.558	4.148	49.755
	5		24.151		3.858	0.107	0.521		28.637
	6		7.081		0.294		0.135		7.510
	7	3.450	2.112		38.429	0.018	0.113		44.122
	8	1.175	3.283		0.138	0.209	0.014	0.229	5.048
	9	2.411	13.581		0.701		0.115		16.808
	10		58.747			0.111	0.596		59.454

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the bottomland sagebrush community. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	3.710 ± 1.927	10	50	0-15.629
Bromus tectorum	14.741 ± 5.651	10	90	0-58.747
Other perennial grasses	6.905 ± 3.866	10	90	0-38.429
Perennial forbs	6.138 ± 3.265	10	70	0-28.408
Annual forbs	0.966 ± 0.528	10	100	.014-5.202
Half shrubs	0.438 ± 0.413	10	20	0-4.148
Total	32.898 ± 6.064	10	100	5.048-59.454
OPEN AREAS				
Agropyron smithii	1.804 ± 0.928	10	70	0-9.624
Bromus tectorum	5.617 ± 2.100	10	100	0.610-22.758
Oryzopsis hymenoides	1.793 ± 1.793	10	10	0-17.927
Other perennial grasses	4.032 ± 1.806	10	70	0-14.579
Perennial forbs	1.784 ± 0.855	10	70	0-7.799
Annual forbs	1.453 ± 1.124	10	80	0-11.485
Half shrubs	0.089 ± 0.089	10	10	0-0.887
Total	16.573 ± 3.802	10	100	4.805-36.208

Table II C-22

Regression equations used for converting fresh weight estimates to oven dry weights for the intensive study plots, May 1977.

Species / Species Group	Regression Equation	Correlation Coefficient
Agropyron smithii	y = 0.512x + 0.717	0.70
Bromus tectorum	y = 0.435x + 0.185	0.62
Oryzopsis hymenoides	y = 0.362x + 1.134	0.84
Other perennial grasses	y = 0.543x + 0.720	0.80
Perennial forbs	y = 0.431x - 0.228	0.62
Annual forbs	y = 0.372x - 0.028	0.68
Half shrubs*	y = 0.379x	
Total biomass	y = 0.529x + 0.948	0.82

*Only one data point

Table II C-23

Regression equations used for converting fresh weight estimates to oven dry weights for the intensive study plots, June 1977.

Species / Species Group	Regression Equation	Correlation Coefficient
Agropyron smithii	y = 0.711x + 1.519	0.75
Bromus tectorum*	y = 0.435x + 0.185	0.62
Oryzopsis hymenoides	y = 0.920x + 0.065	0.80
Other perennial grasses	y = 0.323x + 1.554	0.55
Perennial forbs	y = 0.624x + 0.464	0.86
Annual forbs	y = 0.701x - 0.234	0.99
Half shrubs	y = 0.439x - 0.240	0.92
Total biomass	y = 0.697x + 1.517	0.77

*Same equation as used for May data.

Table II C-24

Regression equations used for converting fresh weight estimates to oven dry weights for the intensive study plots, July 1977.

Species / Species Group	Regression Equation	Correlation Coefficient
Agropyron smithii	y = 0.505x + 0.807	0.70
Bromus tectorum*	y = 0.435x + 0.185	0.62
Oryzopsis hymenoides	y = 0.870x - 0.592	0.93
Other perennial grasses	y = 0.605x + 0.512	0.95
Perennial forbs	y = 0.618x - 0.157	0.94
Annual forbs	y = 0.338x - 0.189	0.96
Half shrubs	y = 0.236x + 0.436	0.98
Total biomass	y = 0.591x + 0.805	0.91

*Same equation as used for May data.

Table II C-25

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 1-O and 1-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 1-O				
Agropyron smithii	0.025 ± 0.025	50	2	0-1.229
Bromus tectorum	0.067 ± 0.037	50	8	0-1.490
Oryzopsis hymenoides	1.089 ± 0.185	50	46	0-4.389
Other perennial grasses	5.992 ± 0.686	50	92	0-22.452
Perennial forbs	0.868 ± 0.229	50	58	0-6.238
Total	8.220 ± 0.689	50	96	0-22.106
PLOT 1-F				
Agropyron smithii	0.054 ± 0.040	50	4	0-1.741
Oryzopsis hymenoides	1.477 ± 0.219	50	62	0-5.836
Other perennial grasses	5.657 ± 0.682	50	96	0-22.452
Perennial forbs	1.112 ± 0.270	50	50	0-9.413
Total	8.465 ± 0.629	50	100	1.213-22.106

Table II C-26

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 1-O and 1-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± (S.E.)	Sample Size	Frequency (%)	Range of Values
PLOT 1-O				
Agropyron smithii	0.415 ± 0.255	50	10	0-12.180
Oryzopsis hymenoides	0.479 ± 0.196	50	30	0-9.263
Other perennial grasses	3.609 ± 0.310	50	92	0-8.010
Perennial forbs	0.492 ± 0.156	50	24	0-5.458
Half shrubs	0.190 ± 0.117	50	6	0-5.069
Total	7.418 ± 0.673	50	100	1.865-21.024
PLOT 1-F				
Agropyron smithii	1.181 ± 0.324	50	30	0-9.337
Bromus tectorum	0.008 ± 0.008	50	2	0-0.403
Oryzopsis hymenoides	0.824 ± 0.199	50	36	0-6.504
Other perennial grasses	4.227 ± 0.586	50	88	0-24.151
Perennial forbs	2.261 ± 0.631	50	42	0-25.436
Half shrubs	0.460 ± 0.180	50	16	0-6.387
Total	9.825 ± 1.218	50	92	0-50.285

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 1-O and 1-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 1-O				
Agropyron smithii	0.047 ± 0.033	50	4	0-1.312
Oryzopsis hymenoides	2.057 ± 0.629	50	30	0-17.991
Other perennial grasses	5.902 ± 0.639	50	92	0-15.648
Perennial forbs	0.593 ± 0.274	50	24	0-11.587
Annual forbs	0.005 ± 0.004	50	4	0-0.150
Half shrubs	0.233 ± 0.181	50	8	0-8.943
Total	8.751 ± 0.803	50	98	0-26.197
PLOT 1-F				
Agropyron smithii	0.407 ± 0.161	50	16	0-4.345
Oryzopsis hymenoides	2.084 ± 0.481	50	42	0-17.121
Other perennial grasses	7.623 ± 0.836	50	94	0-24.729
Perennial forbs	1.584 ± 0.639	50	46	0-22.095
Annual forbs	0.002 ± 0.002	50	2	0-0.100
Half shrubs	0.107 ± 0.043	50	12	0-1.145
Total	11.064 ± 0.928	50	98	0-31.807

Table II C-28

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 2-O and 2-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 2-O				
Agropyron smithii	0.548 ± 0.131	50	30	0-3.276
Bromus tectorum	0.497 ± 0.157	50	36	0-6.709
Oryzopsis hymenoides	0.488 ± 0.139	50	22	0-3.666
Other perennial grasses	7.324 ± 1.003	50	80	0-27.885
Perennial forbs	0.398 ± 0.127	50	46	0-4.945
Annual forbs	0.077 ± 0.034	50	16	0-1.460
Half shrubs	0.038 ± 0.038	50	2	0-1.895
Total	9.482 ± 0.888	50	98	0-27.660
PLOT 2-F				
Agropyron smithii	0.843 ± 0.260	50	34	0-10.955
Bromus tectorum	0.702 ± 0.171	50	48	0-5.405
Oryzopsis hymenoides	0.799 ± 0.161	50	36	0-3.666
Other perennial grasses	5.306 ± 0.510	50	94	0-18.649
Perennial forbs	3.043 ± 0.642	50	88	0-27.359
Annual forbs	0.045 ± 0.030	50	12	0-1.460
Half shrubs	0.857 ± 0.540	50	8	0-20.845
Total	12.500 ± 1.215	50	100	1.213-39.033

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 2-O and 2-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 2-O				
Agropyron smithii	0.684 ± 0.290	50	16	0-12.180
Bromus tectorum	0.016 ± 0.011	50	4	0-0.403
Oryzopsis hymenoides	0.124 ± 0.084	50	6	0-3.745
Other perennial grasses	3.412 ± 0.345	50	86	0-12.853
Perennial forbs	1.291 ± 0.497	50	28	0-16.072
Annual forbs	0.129 ± 0.070	50	10	0-3.039
Half shrubs	0.031 ± 0.031	50	2	0-1.557
Total	7.921 ± 0.849	50	96	0-25.552
PLOT 2-F				
Agropyron smithii	0.793 ± 0.220	50	26	0-5.073
Oryzopsis hymenoides	0.879 ± 0.309	50	22	0-9.263
Other perennial grasses	2.004 ± 0.211	50	76	0-7.365
Perennial forbs	1.365 ± 0.371	50	44	0-12.950
Annual forbs	0.035 ± 0.020	50	6	0-0.585
Half shrubs	0.040 ± 0.040	50	2	0-1.996
Total	5.585 ± 0.551	50	94	0-16.147

Table II C-30

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 2-O and 2-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 2-O				
Agropyron smithii	1.024 ± 0.261	50	28	0-5.861
Bromus tectorum	0.009 ± 0.009	50	2	0-0.453
Oryzopsis hymenoides	0.480 ± 0.226	50	12	0-9.291
Other perennial grasses	4.746 ± 0.707	50	72	0-15.648
Perennial forbs	0.685 ± 0.240	50	32	0-9.114
Annual forbs	0.299 ± 0.203	50	20	0-9.957
Half shrubs	0.013 ± 0.013	50	2	0-0.672
Total	7.460 ± 0.832	50	92	0-22.063
PLOT 2-F				
Agropyron smithii	0.372 ± 0.152	50	16	0-5.861
Bromus tectorum	0.014 ± 0.010	50	4	0-0.453
Oryzopsis hymenoides	1.621 ± 0.557	50	24	0-17.991
Other perennial grasses	4.819 ± 0.743	50	78	0-24.729
Perennial forbs	1.152 ± 0.405	50	34	0-13.441
Annual forbs	0.267 ± 0.201	50	12	0-9.957
Half shrubs	0.032 ± 0.032	50	2	0-1.617
Total	8.073 ± 0.942	50	94	0-24.425

Table II C-31

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 3-O and 3-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 3-O				
Agropyron smithii	0.898 ± 0.133	50	56	0-3.276
Other perennial grasses	7.576 ± 0.282	50	100	3.980-12.672
Perennial forbs	3.066 ± 0.171	50	100	1.065-5.807
Annual forbs	0.016 ± 0.007	50	10	0-0.158
Total	12.215 ± 0.361	50	100	7.296-17.875
PLOT 3-F				
Agropyron smithii	4.607 ± 0.301	50	100	1.741-9.931
Other perennial grasses	8.913 ± 0.387	50	100	1.807-14.846
Perennial forbs	3.981 ± 0.266	50	100	1.065-9.686
Annual forbs	0.029 ± 0.010	50	16	0-0.344
Half shrubs	0.008 ± 0.008	50	2	0-0.379
Total	18.160 ± 0.615	50	100	9.940-25.809

Table II C-32

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 3-O and 3-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 3-O				
Agropyron smithii	4.263 ± 0.207	50	100	1.875-9.337
Other perennial grasses	2.942 ± 0.115	50	100	1.877-5.428
Perennial forbs	1.457 ± 0.121	50	96	0-4.210
Half shrubs	0.076 ± 0.041	50	8	0-1.557
Total	8.421 ± 0.345	50	100	3.955-14.754
PLOT 3-F				
Agropyron smithii	4.337 ± 0.245	50	96	0-8.626
Other perennial grasses	3.258 ± 0.109	50	100	2.199-6.396
Perennial forbs	1.617 ± 0.162	50	82	0-5.458
Half shrubs	0.164 ± 0.076	50	10	0-2.874
Total	9.633 ± 0.364	50	100	4.304-18.934

Table II C-33

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 3-O and 3-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 3-O				
Agropyron smithii	3.011 ± 0.186	50	100	1.060-5.861
Other perennial grasses	4.181 ± 0.183	50	100	2.328-6.566
Perennial forbs	0.622 ± 0.089	50	88	0-2.933
Half shrubs	0.067 ± 0.029	50	10	0-0.909
Total	7.743 ± 0.319	50	100	4.643-14.387
PLOT 3-F				
Agropyron smithii	2.920 ± 0.144	50	100	1.312-5.861
Other perennial grasses	4.011 ± 0.228	50	100	1.723-9.593
Perennial forbs	0.616 ± 0.122	50	80	0-4.170
Half shrubs	0.056 ± 0.028	50	8	0-0.909
Total	7.448 ± 0.267	50	100	4.348-12.025

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 4-0 and 4-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 4-0				
Agropyron smithii	1.242 ± 0.170	50	64	0-4.300
Bromus tectorum	0.020 ± 0.015	50	4	0-0.620
Oryzopsis hymenoides	0.294 ± 0.157	50	10	0-6.921
Other perennial grasses	1.263 ± 0.416	50	60	0-8.869
Perennial forbs	0.015 ± 0.013	50	4	0-0.634
Annual forbs	0.036 ± 0.013	50	16	0-0.344
Total	2.782 ± 0.306	50	92	0-9.676
PLOT 4-F				
Agropyron smithii	0.741 ± 0.117	50	52	0-2.764
Bromus tectorum	0.008 ± 0.008	50	2	0-0.403
Oryzopsis hymenoides	0.726 ± 0.188	50	28	0-5.474
Other perennial grasses	0.809 ± 0.165	50	46	0-6.153
Other annual grasses	0.021 ± 0.021	50	2	0-1.055
Perennial forbs	0.054 ± 0.025	50	18	0-1.065
Annual forbs	0.074 ± 0.034	50	16	0-1.460
Total	2.541 ± 0.225	50	90	0-7.296

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 4-0 and 4-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 4-0				
Agropyron smithii	1.074 ± 0.152	50	52	0-2.941
Oryzopsis hymenoides	0.236 ± 0.119	50	10	0-4.665
Other perennial grasses	1.015 ± 0.197	50	40	0-4.782
Perennial forbs	0.037 ± 0.026	50	4	0-1.088
Annual forbs	0.012 ± 0.012	50	2	0-0.585
Half shrubs	0.177 ± 0.093	50	8	0-3.752
Total	2.849 ± 0.324	50	84	0-10.574
PLOT 4-F				
Agropyron smithii	1.205 ± 0.136	50	62	0-2.230
Oryzopsis hymenoides	0.652 ± 0.179	50	30	0-5.584
Other perennial grasses	0.745 ± 0.171	50	34	0-4.782
Perennial forbs	0.081 ± 0.042	50	8	0-1.713
Annual forbs	0.030 ± 0.022	50	4	0-0.936
Half shrubs	0.396 ± 0.117	50	22	0-3.313
Total	3.058 ± 0.321	50	84	0-9.180

Table II C-36

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 4-O and 4-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 4-O				
Agropyron smithii	1.202 ± 0.246	50	50	0-9.904
Bromus tectorum	0.009 ± 0.009	50	2	0-0.453
Oryzopsis hymenoides	0.593 ± 0.297	50	12	0-11.031
Other perennial grasses	2.070 ± 0.728	50	40	0-32.600
Perennial forbs	0.012 ± 0.010	50	4	0-0.461
Annual forbs	0.006 ± 0.003	50	6	0-0.100
Half shrubs	0.352 ± 0.212	50	8	0-7.525
Total	4.605 ± 0.858	50	82	0-32.102
PLOT 4-F				
Agropyron smithii	0.870 ± 0.167	50	42	0-3.839
Oryzopsis hymenoides	1.175 ± 0.292	50	28	0-6.681
Other perennial grasses	1.363 ± 0.391	50	38	0-13.831
Perennial forbs	0.015 ± 0.010	50	6	0-0.461
Annual forbs	0.007 ± 0.004	50	6	0-0.150
Half shrubs	0.594 ± 0.241	50	18	0-9.888
Total	4.483 ± 0.709	50	86	0-27.968

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 5-0 and 5-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 5-0				
Agropyron smithii	0.025 ± 0.025	50	2	0-1.229
Oryzopsis hymenoides	1.882 ± 0.336	50	62	0-13.794
Other perennial grasses	2.201 ± 0.439	50	40	0-18.649
Other annual grasses	0.039 ± 0.038	50	2	0-1.925
Perennial forbs	0.529 ± 0.367	50	12	0-17.014
Total	5.071 ± 1.038	50	98	0-43.264
PLOT 5-F				
Agropyron smithii	0.697 ± 0.174	50	38	0-5.836
Oryzopsis hymenoides	1.613 ± 0.240	50	58	0-5.474
Other perennial grasses	3.211 ± 0.383	50	80	0-11.586
Perennial forbs	0.599 ± 0.135	50	50	0-4.083
Annual forbs	0.010 ± 0.008	50	4	0-0.344
Total	6.238 ± 0.508	50	100	1.213-16.817

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 5-O and 5-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 5-O				
Agropyron smithii	0.232 ± 0.090	50	12	0-2.230
Oryzopsis hymenoides	2.404 ± 0.417	50	62	0-11.103
Other perennial grasses	0.728 ± 0.151	50	34	0-3.491
Perennial forbs	0.031 ± 0.022	50	4	0-0.776
Annual forbs	0.012 ± 0.012	50	2	0-0.585
Total	3.573 ± 0.365	50	84	0-9.877
PLOT 5-F				
Agropyron smithii	0.941 ± 0.221	50	32	0-6.494
Oryzopsis hymenoides	1.839 ± 0.310	50	70	0-7.424
Other perennial grasses	1.911 ± 0.212	50	70	0-4.782
Perennial forbs	0.330 ± 0.109	50	20	0-3.586
Annual forbs	0.012 ± 0.012	50	2	0-0.585
Half shrubs	0.093 ± 0.054	50	6	0-1.996
Total	5.474 ± 0.453	50	100	1.865-19.631

Table II C-39

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 5-O and 5-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 5-O				
Agropyron smithii	0.748 ± 0.316	50	22	0-13.441
Oryzopsis hymenoides	2.098 ± 0.414	50	62	0-13.641
Other perennial grasses	2.460 ± 0.668	50	56	0-22.913
Perennial forbs	0.080 ± 0.041	50	16	0-1.697
Total	4.902 ± 0.854	50	94	0-28.559
PLOT 5-F				
Agropyron smithii	0.440 ± 0.094	50	32	0-1.818
Oryzopsis hymenoides	2.115 ± 0.482	50	56	0-15.381
Other perennial grasses	3.161 ± 0.430	50	84	0-18.520
Perennial forbs	0.268 ± 0.134	50	18	0-6.024
Annual forbs	0.002 ± 0.002	50	2	0-0.100
Half shrubs	0.983 ± 0.052	50	18	0-1.697
Total	5.029 ± 0.539	50	90	0-18.520

Table II C-40

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 6-O and 6-F, May 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 6-O				
Agropyron smithii	1.238 ± 0.582	50	42	0-28.631
Oryzopsis hymenoides	0.052 ± 0.052	50	2	0-2.581
Other perennial grasses	6.224 ± 0.600	50	88	0-17.019
Perennial forbs	2.012 ± 0.469	50	70	0-14.859
Total	9.965 ± 1.039	50	92	0-32.685
PLOT 6-F				
Agropyron smithii	0.191 ± 0.059	50	18	0-1.229
Oryzopsis hymenoides	0.400 ± 0.120	50	20	0-3.304
Other perennial grasses	3.440 ± 0.314	50	96	0-11.586
Perennial forbs	0.544 ± 0.240	50	48	0-10.548
Total	4.695 ± 0.414	50	98	0-15.494

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 6-O and 6-F, June 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 6-O				
Agropyron smithii	0.546 ± 0.180	50	20	0-5.783
Oryzopsis hymenoides	0.030 ± 0.022	50	4	0-0.985
Other perennial grasses	3.456 ± 0.337	50	88	0-11.238
Perennial forbs	1.471 ± 0.423	50	44	0-12.950
Total	7.531 ± 0.896	50	90	0-30.778
PLOT 6-F				
Agropyron smithii	0.418 ± 0.124	50	20	0-3.651
Oryzopsis hymenoides	0.498 ± 0.144	50	30	0-4.664
Other perennial grasses	2.259 ± 0.125	50	92	0-4.136
Perennial forbs	0.270 ± 0.085	50	26	0-3.586
Total	3.857 ± 0.266	50	94	0-7.787

Table II C-42

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats in Plots 6-O and 6-F, July 1977. Based on data derived from regression equations. Production values in grams/m^2.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 6-O				
Agropyron smithii	0.677 ± 0.438	50	10	0-21.022
Other perennial grasses	6.305 ± 1.375	50	94	0-67.109
Perennial forbs	1.497 ± 0.381	50	62	0-12.205
Total	8.686 ± 1.609	50	96	0-75.209
PLOT 6-F				
Agropyron smithii	0.093 ± 0.071	50	4	0-3.334
Oryzopsis hymenoides	1.586 ± 0.407	50	46	0-15.381
Other perennial grasses	4.307 ± 0.403	50	94	0-12.015
Perennial forbs	0.886 ± 0.254	50	46	0-8.496
Annual forbs	0.003 ± 0.003	50	2	0-0.150
Half shrubs	0.016 ± 0.014	50	4	0-0.672
Total	6.430 ± 0.546	50	96	0-16.158

Table II C-43

Fresh weight estimates (grams) for intensive study plot 1-F, chained pinyon-juniper rangeland. July, 1978.

Quadrat Number	1 26	2 27	3 28	4 29	5 30	6 31	7 32	8 33	9 34	10 35	11 36	12 37	13 38	14 39	15 40	16 41	17 42	18 43	19 44	20 45	21 46	22 47	23 48	24 49	25 50
Agropyron smithii	1	<1			<1												18						6 <1		11
Bromus tectorum		1			1		<1 <1				<1		<1 <1		<1	<1		<1	<1	<1					1
Oryzopsis hymenoides		35 6	17	27	40	2	10 100	17 12	10 65	30 10	12	33	30	7 65	55		50	45 5	50	65 40	13 <1		80 40	7	25
Perennial grasses	20	3 55	12	11 40	12 3	35 35	20 13	12 15	5	3 3	13 1	8 40	6 10	37 5	28 40	30 55	85	5 13	18	45 5	83 15	2 10	4	10	20
Perennial forbs					3	40			1			5	1	2	2	<1	3 2			10					40
Annual forbs					<1 <1		<1					<1					1			2					<1 1
Half shrubs					7		5				45		3				30 4	18		8			35 3		3
Total Biomass	20 1	39 61	17 12	38 40	15 51	75 37	30 118	29 27	10 71	33 13	70 1	13 73	36 14	46 70	28 97	30 55	52 141	50 36	50 18	112 63	96 15	2 10	125 40	0 17	11 90

Table II C-44

Fresh weight estimates (grams) for intensive study plot 2-F, chained pinyon-juniper rangeland. July, 1978

Quadrat Number	1 26	2 27	3 28	4 29	5 30	6 31	7 32	8 33	9 34	10 35	11 36	12 37	13 38	14 39	15 40	16 41	17 42	18 43	19 44	20 45	21 46	22 47	23 48	24 49	25 50
Agropyron smithii	13 6	2	14 40	5 19	20	23	2 20	1 33	25	18		1			18	27	25		6	11		26	80	20 40	5
Bromus tectorum	<1 <1	1	3	<1	<1 5	3 <1	<1 3	<1	1 4	<1 9	4 5	2 1	<1	6	4	3	1 6	1 <1	1 2		2 1	1 3	3 5		7
Oryzopsis hymenoides	16	17					33		33			8					4 35	3 55	8	7			10	30	
Perennial grasses	30	35 2	25	55 30	7	2	30	70 12	15 5		6	1 18	27	60 1		45	6	2 5	3 20	2	35	70		17	52 6
Perennial forbs		1	18 2				4	2	1	20 2					16		37	2	1		2			2	4
Annual forbs	1		<1			1			<1	2	4 7	<1 2			1 1	1	2		2	<1	2	1 1			
Half shrubs					3				11							12					4				
Total Biomass	43 23	55 3	35 67	60 49	23 12	29 <1	39 53	73 45	53 42	38 13	14 12	4 29	27 <1	60 7	35 5	45 43	73 43	6 62	19 24	11 9	45 1	28 74	83 15	37 72	61 13

Table II C-45

Fresh weight estimates (grams) for intensive study plot 5-F, pinyon-juniper woodland. July 1978.

Quadrat Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Agropyron smithii		2	5	<1			2	2												2		1		3	
																	3					8	3	2	
Bromus tectorum																							<1		
		2							<1					1		<1					<1			<1	
Oryzopsis hymenoides	35		13	10			5	7					<1	4	3			5		2		2	20	16	1
	1	2	4	18			50			15			7				6			13	5			18	
Perennial grasses	20	<1	8	<1	25	22		20	8	5	15	3	1	6		18	8				10	5	2	40	15
	5	3	8		9	15	4	35	11	8	13	25	19	20	3	6	7	80	40	1		12	32	50	200
Perennial forbs					2								2											4	
				1	3		6		3			<1							17	<1	2	<1	2	8	
Annual forbs	<1	<1	<1		<1		<1		<1			<1								<1	4				
			<1	<1	<1	3			<1		<1	1	<1	1		1					2	<1	1		
Half shrubs																							1		
				1																					
Total Biomass	55	2	26	10	27	22	7	29	8	5	15	3	3	10	3	18	8	5	0	4	14	8	23	63	16
	6	7	12	20	12	18	60	35	14	23	13	26	26	22	3	7	16	80	57	14	9	20	38	78	200

Table II C-46

Fresh weight estimates (grams) for intensive study plot 6-F, pinyon-juniper woodland. July, 1978.

Quadrat Number	1 26	2 27	3 28	4 29	5 30	6 31	7 32	8 33	9 34	10 35	11 36	12 37	13 38	14 39	15 40	16 41	17 42	18 43	19 44	20 45	21 46	22 47	23 48	24 49	25 50
Agropyron smithii		3			12	3	4	3	<1			2	9		6	1	4		1				9		
								3	15	6	20	10	3	35			20		5	40	9	3	45		
Bromus tectorum					2									<1	4										
Oryzopsis hymenoides				30												65		35		15	47	40			10
				12	30	6				13			2	3	45					12		2	50		
Perennial grasses	70	55	20	95	100	30	60	50	20		<1	13	10	40	28	45	60	100	7	100	110	40	45	65	45
	50	20	150	55	60	85	110	50	120	85	17	30	85	35	5	50	55	35	30	100	30	40	45	60	14
Perennial forbs	2	15			4	3	3	45	15			7	1	14	30	35	22	10	12	20	22	60	25	50	30
	15	30	20	55	25	18	2	32	7	35	18	7	6		6	15	6	33	30	1	6	12		20	15
Annual forbs										11														1	
								<1					<1											<1	
Half shrubs		60							10			7													
Total Biomass	72	130	20	125	104	36	67	98	45	11	<1	29	20	54	64	146	86	145	20	135	179	140	79	116	85
	65	53	170	122	129	109	112	85	142	139	55	47	96	43	60	65	81	68	65	153	45	57	140	80	29

Oven dry weights (grams) for chained pinyon-juniper rangeland plots 1-F and 2-F. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
Plot 1-F	2		3.820	38.283	9.301	0.037			51.404
	5				9.597		0.547		10.144
	10			21.505	1.071				22.576
	16		0.336		29.040	0.149	0.158		29.525
	20			38.994	40.052		2.356		81.402
	21			6.114	64.422				70.536
	30		3.929	23.056	3.846		1.229	4.361	36.421
	32		0.115	62.142	10.861			2.301	75.419
	39		0.312	37.307	2.619				39.926
	40		0.787	22.570	37.541	1.435			62.333
Plot 2-F	6	25.321	3.755		1.096		0.064		30.236
	12		3.398		1.531		0.143		5.072
	15	33.175	0.120			9.202	0.914		43.291
	16		0.095		51.016	0.172			51.188
	21		4.143		17.633		2.010	1.642	25.428
	28	17.526			18.794	0.542			36.862
	34		7.982	15.106	5.685		0.237		29.010
	35		29.132			0.228	2.515		31.875
	36		7.970				3.859		11.829
	48		7.509	5.396					12.905

Oven dry weights (grams) for pinyon-juniper woodland plots 5-F and 6-F. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
Plot 5-F	7	1.573		4.089	0.372		0.179		5.841
	9				3.776				3.776
	12				1.199		0.157		1.356
	14			1.787	3.859				5.646
	31				3.819		1.073		4.892
	35			10.729	3.109				13.838
	41		0.087		2.144		0.152		2.383
	44				20.260	4.358			24.618
	46		0.242	3.941		0.173	0.702		5.058
	48				21.615	1.776	0.471		23.862
Plot 6-F	6	0.396			7.489	1.210			9.095
	13	1.989			5.911	0.148			8.048
	21	4.441		24.508	55.049	15.879	0.025		95.461
	28	4.903			56.719	5.568			62.287
	33	3.570			27.376	14.751	0.875		46.572
	38	3.194			67.699	1.755			72.648
	43	1.344			22.264	26.876	0.199		49.140
	47	3.374	0.020	0.373	22.784	8.857			35.388
	49				28.806	11.719	0.415		40.940
	50				5.448	7.123			12.571

Table II C-49

Regression equations used for converting fresh weight estimates to oven dry weights in plots 1-F, 2-F, 5-F, and 6-F. 1978.

Species / Species Group	Regression Equation	Correlation Coefficient
Agropyron smithii	y = 0.650x + 2.503	0.70
Bromus tectorum	y = 2.748x - 1.543	0.93
Oryzopsis hymenoides	y = 0.586x + 0.565	0.95
Other perennial grasses	y = 0.520x + 3.415	0.88
Perennial forbs	y = 0.616x - 0.893	0.91
Annual forbs	y = 0.537x + 0.234	0.81
Half shrubs	y = 0.924x - 2.160	0.99
Total Biomass	y = 0.518x + 6.597	0.89

Table II C-50

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats at chained pinyon-juniper rangeland Plots 1-F and 2-F, 1978. Production data are in grams/m^2 based on data derived from regression equations.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 1-F				
Agropyron smithii	0.838 ± 0.370	50	14	0-14.201
Bromus tectorum	0.092 ± 0.041	50	26	0-1.205
Oryzopsis hymenoides	12.115 ± 2.098	50	64	0-59.125
Other perennial grasses	12.077 ± 1.579	50	84	0-47.636
Perennial forbs	1.164 ± 0.668	50	24	0-23.747
Annual forbs	0.107 ± 0.038	50	16	0-1.307
Half shrubs	2.500 ± 1.119	50	22	0-39.420
Total	29.461 ± 2.542	50	100	6.597-79.635
PLOT 2-F				
Agropyron smithii	7.800 ± 1.539	50	52	0-54.495
Bromus tectorum	3.968 ± 0.796	50	74	0-23.189
Oryzopsis hymenoides	3.180 ± 1.005	50	26	0-32.733
Other perennial grasses	9.338 ± 1.615	50	62	0-39.832
Perennial forbs	1.161 ± 0.547	50	32	0-21.900
Annual forbs	0.411 ± 0.105	50	38	0-3.992
Half shrubs	0.382 ± 0.238	50	8	0-8.928
Total	24.406 ± 1.707	50	100	6.856-49.591

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for quadrats at pinyon-juniper woodland Plots 5-F and 6-F, 1978. Production data are in grams/m^2 based on data derived from regression equations.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
PLOT 5-F				
Agropyron smithii	1.036 ± 0.277	50	24	0-7.702
Bromus tectorum	0.113 ± 0.082	50	14	0-3.953
Oryzopsis hymenoides	3.357 ± 0.823	50	50	0-29.846
Other perennial grasses	11.724 ± 2.287	50	88	0-107.464
Perennial forbs	0.433 ± 0.213	50	28	0-9.579
Annual forbs	0.323 ± 0.062	50	44	0-2.381
Half shrubs	0.004 ± 0.003	50	4	0-0.100
Total	19.169 ± 2.332	50	100	6.597-110.197
PLOT 6-F				
Agropyron smithii	4.721 ± 1.031	50	58	0-31.750
Bromus tectorum	0.272 ± 0.203	50	8	0-9.449
Oryzopsis hymenoides	5.076 ± 1.374	50	34	0-38.630
Other perennial grasses	30.654 ± 2.556	50	98	0-81.452
Perennial forbs	9.566 ± 1.307	50	88	0-36.068
Annual forbs	0.183 ± 0.124	50	14	0-6.139
Half shrubs	1.293 ± 1.074	50	6	0-53.280
Total	50.306 ± 3.303	50	100	6.856-99.319

Oven dry weights (grams) for range cages and adjacent open areas in the pinyon-juniper woodland treatment (development) site north of Piceance Creek. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Perennial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1		0.366	4.515	3.098	0.133	0.069		8.181
	2			1.806				1.403	3.209
	3			2.571	8.848		0.465		11.884
	4	0.378		3.391	4.084		0.660		8.513
	5		0.048	1.558		0.049	0.077	2.921	4.653
	6			0.648	3.891		0.098		4.637
	7				12.104	0.729	0.567		13.400
	8	2.138			1.375	0.048	0.016		3.577
	9		8.606	4.672	6.279	0.169	5.644		25.370
	10		0.071	4.198	9.465	1.341	0.050		15.125
RANGE CAGES	1			1.649	19.731	0.763			22.143
	2			1.590	28.659	2.967	0.012	0.691	33.919
	3		0.018	1.745	6.834		0.557		9.154
	4	0.424	2.971	7.971	35.753	0.388	2.859		50.366
	5			3.365			0.052	1.278	4.695
	6	2.337			1.036				3.373
	7		0.907	18.739	12.863	0.049	1.165	0.474	34.197
	8	0.488		12.971			0.015		13.474
	9		3.731	6.907	3.853		1.646		16.137
	10		0.017	9.379					9.396

Oven dry weights (grams) for range cages and adjacent open areas in the pinyon-juniper woodland control site north of Piceance Creek. 1978.

	Quadrat Number	Agropyron smithii	Bromus tectorum	Oryzopsis hymenoides	Other Peremnial Grasses	Perennial Forbs	Annual Forbs	Half Shrubs	Total Biomass
OPEN AREA	1			5.648		0.049			5.697
	2			10.816			0.024		10.840
	3	3.339		2.964	1.347	0.447		3.769	11.866
	4		0.041		4.271	0.159		0.983	5.454
	5			0.430		0.042		0.492	0.964
	6			5.057	5.309	2.077		1.073	13.516
	7		0.037	2.436		0.920			3.393
	8			3.796					3.796
	9			0.011	0.168		3.395		3.574
	10				6.749				6.749
RANGE CAGES	1		0.791	13.983	4.815		0.078		19.667
	2			24.159		0.014			24.173
	3	0.084		5.207	8.961	0.306		0.417	14.975
	4			0.563	9.198	6.506		5.739	22.006
	5				22.659	5.137		0.148	27.946
	6			1.488	9.459	0.497		1.359	12.803
	7			8.416		0.370	0.142		8.928
	8			9.730				1.565	11.295
	9			3.633	1.943		0.003	0.248	5.827
	10			2.915	25.130	1.809		0.024	29.878

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the pinyon-juniper woodland development (treatment) site north of Piceance Creek. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	0.325 ± 0.232	10	30	0-2.337
Bromus tectorum	0.764 ± 0.444	10	50	0-3.731
Oryzopsis hymenoides	6.433 ± 1.899	10	90	0-18.739
Other perennial grasses	10.873 ± 4.130	10	70	0-35.753
Perennial forbs	0.417 ± 0.294	10	40	0-2.967
Annual forbs	0.631 ± 0.309	10	70	0-2.859
Half shrubs	0.244 ± 0.139	10	30	0-1.278
Total	19.685 ± 4.853	10	100	3.373-50.366
OPEN AREAS				
Agropyron smithii	0.252 ± 0.213	10	20	0-2.138
Bromus tectorum	0.909 ± 0.856	10	40	0-8.606
Oryzopsis hymenoides	2.336 ± 0.572	10	80	0-4.672
Other perennial grasses	4.914 ± 1.315	10	80	0-12.104
Perennial forbs	0.247 ± 0.140	10	60	0-1.341
Annual forbs	0.765 ± 0.548	10	90	0-5.644
Half shrubs	0.432 ± 0.310	10	20	0-2.921
Total	9.855 ± 2.180	10	100	3.209-25.370

Table II C-55

Mean production ± the standard error of the mean (S.E.), frequency, and range of observed values for clipped plots in the pinyon-juniper woodland control site north of Piceance Creek. Production values in grams/m^2. 1978.

	Mean ± S.E.	Sample Size	Frequency (%)	Range of Values
RANGE CAGES				
Agropyron smithii	0.008 ± 0.008	10	10	0-0.084
Bromus tectorum	0.079 ± 0.079	10	10	0-0.791
Oryzopsis hymenoides	7.009 ± 2.368	10	90	0-24.159
Other perennial grass	8.216 ± 2.889	10	70	0-25.130
Perennial forbs	1.464 ± 0.753	10	70	0-6.506
Annual forbs	0.022 ± 0.015	10	30	0-0.142
Half shrubs	0.950 ± 0.562	10	70	0-5.739
Total	17.750 ± 2.599	10	100	5.827-29.878
OPEN AREAS				
Agropyron smithii	0.334 ± 0.334	10	10	0-3.339
Bromus tectorum	0.008 ± 0.005	10	20	0-0.041
Oryzopsis hymenoides	3.116 ± 1.089	10	80	0-10.816
Other perennial grasses	1.784 ± 0.830	10	50	0-6.749
Perennial forbs	0.369 ± 0.211	10	60	0-2.077
Annual forbs	0.342 ± 0.339	10	20	0-3.395
Half shrubs	0.632 ± 0.374	10	40	0-3.769
Total	6.585 ± 1.311	10	100	0.964-13.516

Table II C-56

Production of bitterbrush, 1978.

Transect	Habitat	PRODUCTION: length of new shoots in fall (mm) Mean ± SE (N)
BA 18	chained rangeland	266 ± 16.6 (100)
BA 25	"	174 ± 11.7 (100)
BA 21	"	211 ± 17.2 (100)
BA 20	"	246 ± 18.8 (100)
BA 23	"	274 ± 25.4 (100)
BA 19	pinyon-juniper	123 ± 7.7 (100)
BA 26	"	133 ± 8.3 (100)
BA 27	"	154 ± 8.7 (100)
BA 16	"	149 ± 9.8 (100)
BA 22	"	179 ± 14.2 (100)
BA 24	"	120 ± 8.2 (100)

II C-4 SOIL SURVEY AND PRODUCTIVITY ASSESSMENT

No additional studies were made during this time period.

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II C-5 DENDROCHRONOLOGY & DENDROCLIMATOLOGY STUDIES

No additional studies were made during this time period.

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TABLE OF CONTENTS

AIR QUALITY AND METEOROLOGY

2.3 Air Ouality and Meteorology

The Air Quality Monitoring Program has been developed to measure background levels of atmospheric gaseous and particulate constituents and meteorological processes which affect transport and diffusion.

The air quality monitoring network during the Interim Monitoring Period (shown on Figure 2.3-1) includes the following:

- One air quality trailer at Station AB23 that has been in continuous operation since September, 1974 (prior to the 2 year Baseline Program).

- One 60-meter meteorological tower located at Station AA23 (adjacent to air quality trailer AB23), also operational since September, 1974. Meteorological parameters are monitored at the 10-meter, 30-meter, and 60-meter levels.

- Weighing-bucket rain gauges at Stations AB23 and AD28 (leachate pile).

In addition, the following stations were operational for a portion of the monitoring period reported in this document:

- One air quality trailer at Station AB26 which initiated operation in October 1981, and discontinued July 27, 1982.

- One meteorological station, AD20, which initiated operation in February 1982, and discontinued July 26, 1982.

- Weighing-bucket rain gauges at Stations AB26 and AD20, which were discontinued July, 1982.

Parameters measured at these stations are listed in Table 2.3-1. Missing data codes for air quality and meteorology are listed in Table 2.3-2. These codes are used on the diurnal tables to explain reasons for instrument down time.

Eight monthly data reports (May - December 1982) are included in this document. These contain all the basic data used for the summaries and analyses reported in the following sections.

All monitoring stations are referenced by their four-digit computer codes. A cross-reference of the computer code and station I.D. appear in Section 4.0 (Data Automation).

FIGURE 2.3-1

Ambient Air Quality
Interim Monitoring Network

TABLE 2.3-1
AIR QUALITY AND METEOROLOGICAL MEASUREMENTS

Station AA23		Sampling Frequency	Minimum Reporting Frequency
Tower:	(@ 10m, 30m, 60m)	5 sec	1 Hr Avg
	Wind Speed	5 sec	1 Hr Avg
	Wind Direction	5 sec	1 Hr Avg
	Temperature	5 sec	1 Hr Avg
	Delta Temp (60-10m)	5 sec	1 Hr Avg
Station AB23			
Trailer:	NO	5 sec	1 Hr Avg
	NO_x	5 sec	1 Hr Avg
	NO_2	NO_x-NO	1 Hr Avg
	O_3	5 sec	1 Hr Avg
	SO_2	5 sec	1 Hr Avg
	H_2S	5 sec	1 Hr Avg
	CO	5 sec	1 Hr Avg
	Barometric Pressure	5 sec	1 Hr Avg
	Solar Radiation	5 sec	1 Hr Avg
	Relative Humidity	5 sec	1 Hr Avg
	Particulates	24 Hr every 4 Days	24 Hr Avg
	Precipitation	Continuous	1 Hr Total
Station AB26			
	No	5 sec	1 Hr Avg
	NO_x	5 sec	1 Hr Avg
	NO_2	5 sec	1 Hr Avg
	O_3	5 sec	1 Hr Avg
	SO_2	5 sec	1 Hr Avg
	H_2S	5 sec	1 Hr Avg
	CO	5 sec	1 Hr Avg
	Relative Humidity	5 sec	1 Hr Avg
	Particulates	24 Hr every 4 Days	24 Hr Avg
	Precipitation	Continuous	1 Hr Total
	Wind Speed	5 sec	1 Hr Avg
	Wind Direction	5 sec	1 Hr Avg
	Temperature	5 sec	1 Hr Avg
Station AD20			
	Wind Speed	Continuous	1 Hr
	Wind Direction	Continuous	1 Hr
	Temperature	Continuous	1 Hr
Station AD28			
	Precipitation	Continuous	1 Hr Total

TABLE 2.3-2

AIR QUALITY AND METEOROLOGICAL MISSING DATA CODES

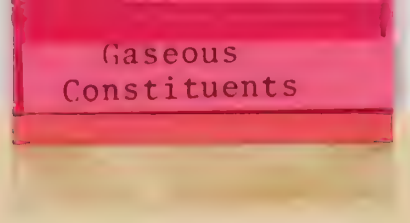
Code	Description
CA	Calibration (calibration, system check)
CM	Calm (no wind direction when wind speed = 0)
IM	Instrument Malfunction (instrument failures)
IN	Interference (CO_2 interference on sulfur data, SO interference in oxidant readings)
FO	Flame Out (on the GC - THC, HC, CH_4, CO)
LI	Local Interference (car nearby)
MT	Maintenance (changing paper, tape, charcoal)
NV	Not Visible (values were not within range of instrument, i.e., inversion heights may exist beyond the full scale of the Acoustic Radar)
OE	Operator Error (Field tech leaves switch in wrong position)
OR	Out for Repair (instrument removed from site with no replacement)
OS	Off Scale
PF	Power Failure (generator failure)
RF	Recording System Failure (chart jams, runs out, clock stop)
SE	Special Experiment
SR	System Removed
TR	Trace of Precipitation
TS	Temporary Monitoring Shutdown due to Operations Conflict
UN	Unlimited Ceiling (reported by NWS Stations)
	Blank (causes a space to be printed as in the beginning of a new month before a component starts)
VA	Variable Wind Direction
WR	Weather Related Malfunction (instrument freezes, temperature readings below instrumental detection)


Ambient
Air Quality
Gaseous
Constituents

2.3.1 Ambient Air Quality

The monitoring program for air quality was carried out in accordance with the provisions of the Interim Monitoring Plan approved by the Oil Shale Office (OSO). During this reporting period ambient air stations AB23 and AB26 (through July 27, 1982) monitored gaseous constituents.

Station AB23 data are presented for May - December, 1982. Station AB26 is to be reported on an "as can" basis. No data for Station AB26 are reported in this document.


Gaseous
Constituents

2.3.1.1 Gaseous Constituents

This section contains summary tables and figures, and trend analyses for air quality data for Station AB23

TABLE 2.3.1.1-1

QUARTERLY SUMMARY (MARCH 1982 - MAY 1982)

($\mu g/m^3$)

STATION AB23

Parameter	Average	Maximum 24-Hour Value	Maximum 24-Hour Date	Maximum 24-Hour Time	Maximum 8-Hour Value	Maximum 8-Hour Date	Maximum 8-Hour Time	Maximum 3-Hour Value	Maximum 3-Hour Date	Maximum 3-Hour Time	Maximum 1-Hour Value	Maximum 1-Hour Date	Maximum 1-Hour Time
H_2S	1.2										10.0		(2)
SO_2	1.5	13.0	3/30/82	1100				15.7	3/29/82	1700	16.0		(3)
Particulate	19.8	43.5	5/31/82	0100									
O_3	(1)										137.3	5/19/82	1500
NO_x	9.0										105.0	5/13/82	0200
NO	2.7										40.0	5/13/82	0200
NO_2	4.8										49.0	5/13/82	0100
CO	20.5				200.0	5/24/82	1700				600.0	5/24/82	2100

(1) <75% data for quarter, therefore no average reported.

(2) Maximum 1-hour concentration of H_2S occurred 4 times: 3/22/82 @ 1400, 1500, 1600, 1700.

(3) Maximum 1-hour concentration of SO_2 occurred 6 times: 3/29/82 @ 1700, 1800, 1900, 2200, 2400; 5/6/82 @ 1300.

TABLE 2.3.1.1-2

QUARTERLY SUMMARY (JUNE 1982 - AUGUST 1982)
($\mu g/m^3$)

STATION AB23

Parameter	Average	Maximum 24-Hour Value	Maximum 24-Hour Date	Maximum 24-Hour Time	Maximum 8-Hour Value	Maximum 8-Hour Date	Maximum 8-Hour Time	Maximum 3-Hour Value	Maximum 3-Hour Date	Maximum 3-Hour Time	Maximum 1-Hour Value	Maximum 1-Hour Date	Maximum 1-Hour Time
H_2S	1.4										8.0		(2)
SO_2	2.4	8.3	8/18/82	1300				14.0	8/18/82	1300	21.0	6/11/82	2000
Particulate	23.7	51.4	6/08/82	0100									
O_3	75.1										143.0	8/07/82	2400
NO_x	3.1										103.0	6/11/82	2000
NO	1.4										35.0	6/11/82	2000
NO_2	1.0										49.0	6/11/82	2000
CO	17.6				100.0		(1)				200.0		(3)

(1) Maximum 8-hour concentration of CO occurred 25 times: refer to monthly diurnal tables for times of occurrences.
(2) Maximum concentration of H_2S occurred 10 times: 7/1/82 @ 0800, 1900, 2000; 7/2/82 @ 2400; 7/3/82 @ 1200; 8/5/82 @ 1400, 1500; 8/6/82 @ 2200, 2300; and 8/18/82 @ 1400.
(3) Maximum concentration of CO occurred 4 times: 6/26/82 @ 0700, 0800; 8/18/82 @ 1100; 8/23/82 @ 2400.

TABLE 2.3.1.1-3

QUARTERLY SUMMARY (Sept. 1982 - Nov. 1982)
($\mu g/m^3$)

STATION A823

Parameter	Average	Maximum 24-hour Value	Date	Time	Maximum 8-hour Value	Date	Time	Maximum 3-hour Value	Date	Time	Maximum 1-hour Value	Date	Time
H_2S	0.7										10.0	11/21/82	(1)
SO_2	0.7	4.6	11/23/82	1700				11.3	11/17/82	1100	13.0	11/17/82	1100
Particulate	11.1	26.9	10/18/82	0100									
O_3	61.3										104.0	9/04/82	1800
NO_x	1.3										8.0		(2)
NO	0.3										5.0	10/27/82	1600
NO_2	1.3										8.0	11/30/82	1800
CO	11.3				100.0	(4)					300.0	10/30/82	(3)

(1) Maximum 1-hour concentration of H_2S occurred 3 times; 11/21/82 @ 0600, 1400, and 1600.
(2) Maximum 1-hour concentration of NO_x occurred 6 times; refer to monthly diurnal tables for times of occurrences.
(3) Maximum 1-hour concentration of CO occurred 2 times; 10/30/82 @ 0800 and 0900.
(4) Maximum 8-hour concentration of CO occurred >15 times; refer to monthly diurnal tables for times of occurrences.

TABLE 2.3.1.1-4

MONTHLY ARITHMETIC AMBIENT GASEOUS AND PARTICULATE CONCENTRATIONS ($\mu g/m^3$)

Station AB23

1982

Constituent	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	AVERAGE
NO	5.0	(1)	4.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0	1.0	1.7
NO_2	5.0	(1)	5.0	5.0	5.0	2.0	0.0	0.0	1.0	2.0	1.0	4.0	2.7
O_3	66.0	69.0	(IM)	78.0	74.0	79.0	73.0	74.0	56.0	64.0	64.0	62.0	69.0
CO	13.4	7.0	18.7	32.7	28.0	20.0	21.0	10.0	12.0	13.0	9.0	5.0	9.8
SO_2	1.0	2.0	3.0	0.0	0.0	2.0	3.0	2.0	1.0	0.0	1.0	2.0	1.4
H_2S	2.0	1.0	3.0	0.0	0.0	1.0	1.0	2.0	1.0	0.0	1.0	3.0	1.3
Particulate	4.1	7.6	1.2	18.9	22.6	39.4	17.4	15.1	18.4	7.2	3.6	4.0	13.3

(IM) Instrument Malfunction
(1) <50% data

TABLE 2.3.1.1-5

MAXIMUM CONCENTRATIONS OF NO_x, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	71		86	51	105	103	*	*	*	*	*	13
Date	1/9/82		3/4/82	4/18/82	5/13/82	6/11/82						12/9/82
Time (MST)	1100	(1)	0100	2100	0200	2000						1100
Wind Direction(DEG)	315		322	320	316	322						285
Wind Speed (MPS)	0		3	4	4	4						1

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(1) >50% data missing due to Instrument Malfunction and Out for Repair. A peak of 58 $\mu g/m^3$ occurred on 2/1/82 at 0100; this value is questionable.

TABLE 2.3.1.1-6

MAXIMUM CONCENTRATIONS OF NO, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	29	20	29	18	40	35	*	*	*	*	*	*
Date	1/9/82	2/1/82	3/5/82	4/18/82	5/13/82	6/11/82						
Time	1100	0100	0800	2100	0200	2000						
Wind Direction(DEG)	315	321	333	320	316	322						
Wind Speed (MPS)	0	2	3	4	4	4						

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

TABLE 2.3.1.1-7

MAXIMUM CONCENTRATIONS OF NO_2, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	26		47	24	49	49	*	*	*	*	*	11
Date	1/9/82		3/4/82	4/17/82	5/13/82	6/11/82						12/10/82
Time	1100	(1)	0100	0300	0100	2000						(1)
Wind Direction(DEG)	315		322	(cm)	321	322						298
Wind Speed (MPS)	0		3	(cm)	5	4						2

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(cm) Calm

(1) >50% data missing due to Instrument Malfunction and Out for Repair. A peak of 28 $\mu g/m^3$ occurred on 2/1/82 at 0100; this value is questionable.

TABLE 2.3.1.1-8

MAXIMUM CONCENTRATIONS OF OZONE, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	125	133		108	137	129	110	143	104	100	88	82
Date	1/15/82	2/10/82		4/17/82	5/19/82	6/5/82	7/14/82	8/7/82	9/4/82	10/7/82	11/7/82	12/14/82
Time (MST)	1000	0700	(1)	1000	1500	1200	1800	2400	1800	1800	(2)	1300
Wind Direction(DEG)	234	264		227	291	188	258	152	226	217	215	
Wind Speed (MPS)	4	1		3	3	9	2	3	4	4	5	0

(1) <25% data due to Instrument Malfunction.
(2) Maximum concentration occurred 2 times: 11/7/82 @ 1500, 1600.

TABLE 2.3.1.1-9

MAXIMUM CONCENTRATIONS OF CO, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	200	200	100	200	600	*	*	*	*	300	*	*
Date	(1)	2/24/82	(3)	4/5/82	5/24/82					10/30/82		
Time (MST)		1000		1000	2100					(6)		
Wind Direction(DEG)	203	9	317	80	44							
Wind Speed (MPS)	9	0	2	1	3							
8-Hour Maximum												
Value ($\mu g/m^3$)	200	100	100	100	200	*	*	*	*	*	*	*
Date	1/3/82	(2)	(4)	(5)	5/24/82							
Time (MST)	2300				1700							
Wind Direction(DEG)	223	321	325	121	289							
Wind Speed (MPS)	8	2	2	0	1							

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks, and monthly sliding average tables report 8-hour peaks.

(1) 1-Hour Maximum Concentration occurred 8 times: 1/4/82 @ 0300-0600; 1/5/82 @ 1700; 1/6/82 @ 0500-0600 and 1700.
(2) 8-Hour " " " 5 times: 2/1/82 @ 0100; 2/3/82 @ 2400; 2/4/82 @ 0800; 2/5/82 @ 0400; 2/24/82 @ 0500.
(3) 1-Hour " " " 59 times: refer to March diurnal table.
(4) 8-Hour " " " >5 times: 3/5/82 @ 0600; 3/9/82 @ 1300; 3/22/82 @ 1000; 3/23/82 @ 2300; 3/24/82 @ 0700.
(5) 8-Hour " " " >5 times: 4/2/82 @ 2300; 4/5/82 @ 0300; 4/10/82 @ 2300; 4/12/82 @ 2400; 4/14/82 @ 2300.
(6) 1-Hour " " " 2 times: 10/20/82 @ 0800, 0900.

TABLE 2.3.1.1-10

MAXIMUM CONCENTRATIONS OF SO_2, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	10.0	10.0	16.0	10.0	16.0	21.0	8.0	16.0	*	*	13.0	13.0
Date	1/12/82	(2)	(4)	4/9/82	5/6/82	6/11/82	(6)	8/18/82			11/17/82	12/30/82
Time (MST)	1200			1700	1300	2000		1400			1100	1500
Wind Direction(DEG)	322	325	265	310		322		303			214	308
Wind Speed (MPS)	3	2	1	5	4	4		3			4	2
3-Hour Maximum												
Value ($\mu g/m^3$)	7.9	8.7	15.7	8.7	7.0	13.1	7.9	14.0	*	*	11.3	11.3
Date	1/18/82	(3)	3/29/82	4/9/82	(5)	6/11/82	7/1/82	8/18/82			11/17/82	12/30/82
Time (MST)	(1)		1700	1600		1800	1400	1300			1100	1400
Wind Direction(DEG)	214	9	242	307		297	194	282			214	301
Wind Speed (MPS)	8	0	9	5		4	8	2			4	3
24-Hour Maximum												
Value ($\mu g/m^3$)	5.8	4.6	9.5	4.8	1.3	6.4	5.7	8.3	3.9	*	4.6	6.2
Date	1/17/82	2/24/82	3/29/82	4/8/82	5/19/82	6/24/82	7/1/82	8/18/82	9/2/82		11/23/82	12/30/82
Time (MST)	2100	1900	0100	2100	2000	1400	0700	1300	0700		1700	1300
Wind Direction(DEG)	206	260	185	338	310	203	189	282	Calm		294	306
Wind Speed (MPS)	4	1	10	3	2	2	1	2	0		2	3

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks, and monthly sliding average tables report 3-hour and 24-hour peaks.

(1) 3-Hour maximum concentration occurred 2 times: 1/18/82 @ 0800 and 1100.
(2) 1-Hour " " " 2 times: 2/24/82 @ 1200; 2/25/82 @ 1200.
(3) 3-Hour " " " 2 times: 2/24/82 @ 1000; 2/25/82 @ 1100.
(4) 1-Hour " " " 2 times: 3/29/82 @ 2200 and 2400.
(5) 3-Hour " " " 2 times: 5/6/82 @ 1300; 5/28/82 @ 1900.
(6) 1-Hour " " " 11 times: refer to monthly diurnal table for times of occurrences.

TABLE 2.3.1.1-11

MAXIMUM CONCENTRATIONS OF H_2S, 1982

Station AB23

By Month

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1-Hour Maximum												
Value ($\mu g/m^3$)	11	10	10	6	*	6	8	8	7	6	10	21
Date		2/24/82	3/22/82	4/8/82		6/10/82	(4)	(5)	(6)	10/7/82	11/21/82	12/13/82
Time (MST)	(1)	1000	(2)	(3)		1500				1500	(7)	1200
Wind Direction(DEG)	262	9	230	161		324				197	200	215
Wind Speed (MPS)	1	0	2	1		3				9	4	5

* Monthly maximum concentration was <25% higher than average daily peaks for the month, and is therefore not reported on this table. Monthly diurnal tables report 1-hour peaks.

(1) Maximum concentration occurred 2 times: 1/7/82 @ 1900; 1/14/82 @ 1200.
(2) " " " 4 times: 3/22/82 @ 1400-1700.
(3) " " " 2 times: 4/8/82 @ 1300-1400.
(4) " " " 4 times: refer to monthly diurnal table for times of occurrences.
(5) " " " 5 times: refer to monthly diurnal table for times of occurrences.
(6) " " " 3 times: 9/21/82 @ 1500; 9/28/82 @ 0900, 1000.
(7) " " " 3 times: 11/21/82 @ 0600, 1400 and 1600.

TABLE 2.3.1.1-12

OXIDANTS (O_3)

C-b TRACT - RIO BLANCO COUNTY

For Calendar Year 1982 - Trailer 023

Number Hourly Observations: 7634

Annual Arithmetic Mean (µg/m3): 68.7

5 Highest Monthly Averages (µg/m3):

1.	143	8/7/82	Hr. Ending		2400
2.	137	5/19/82	"	"	1500
3.	135	5/19/82	"	"	1600
4.	135	8/7/82	"	"	2300
5.	133	2/10/82	"	"	0700

Number of Hourly Concentrations in Ranges:

Range	No. of Values
0.0 - 2.9 (µg/m3)	1126
3.0 - 20.9	10
21.0 - 40.9	234
41.0 - 60.9	1994
61.0 - 80.9	3969
81.0 - 100.9	1281
101.0 - 120.9	130
121.0 - 140.9	15
141.0 - 160.0	1
GREATER THAN 160.0	0

FIGURE 2.3.1.1-1

AB23 QUARTERLY OZONE CONC. ROSE
JAN '82 - MAR '82

TOTAL % OF CALMS DISTRIBUTED (1.93%)
TOTAL NO. OF 1-HOUR SAMPLES - 1296

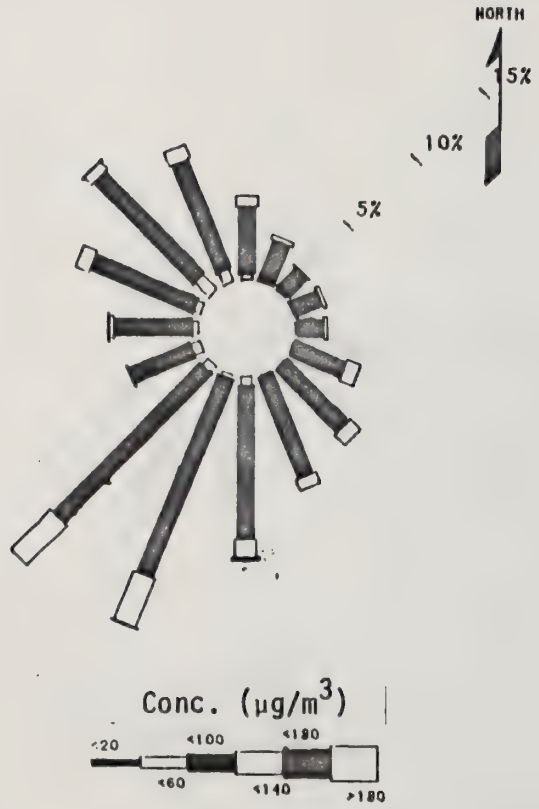


FIGURE 2.3.1.1-2

AB23 QUARTERLY OZONE CONC. ROSE
APR '82 - JUN '82

TOTAL % OF CALMS DISTRIBUTED (1.54%)
TOTAL NO. OF 1-HOUR SAMPLES - 1953

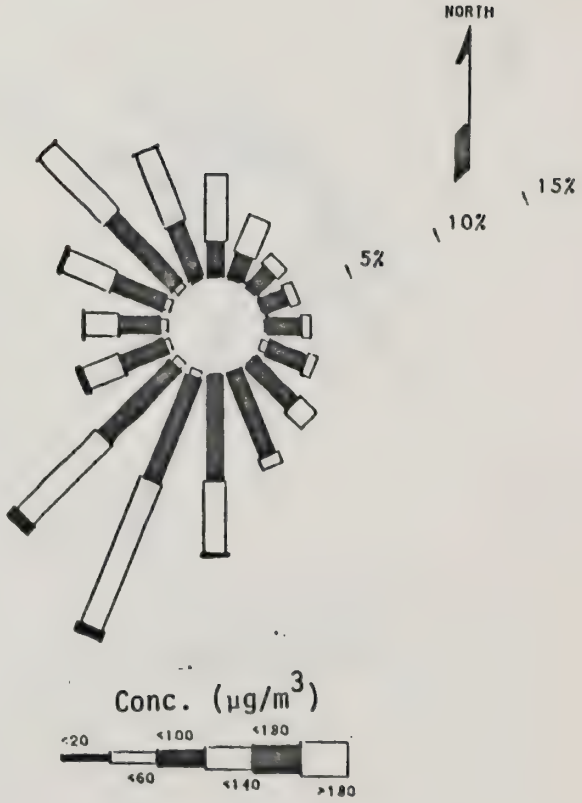


FIGURE 2.3.1.1-3

AB23 QUARTERLY OZONE CONC. ROSE
JUL '82 - SEP '82

TOTAL % OF CALMS DISTRIBUTED (1.82%)
TOTAL NO. OF 1-HOUR SAMPLES - 2143

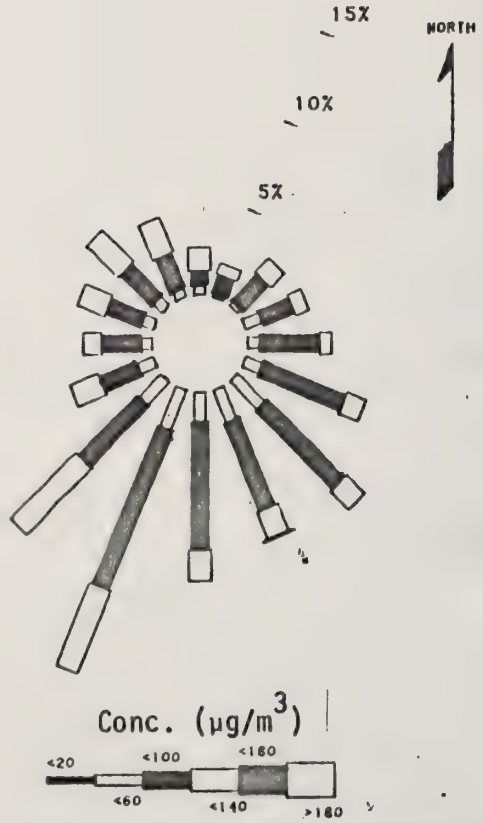


FIGURE 2.3.1.1-4

AB23 QUARTERLY OZONE CONC. ROSE
OCT '82 - DEC '82

TOTAL % OF CALMS DISTRIBUTED (2.11%)
TOTAL NO. OF 1-HOUR SAMPLES - 2135

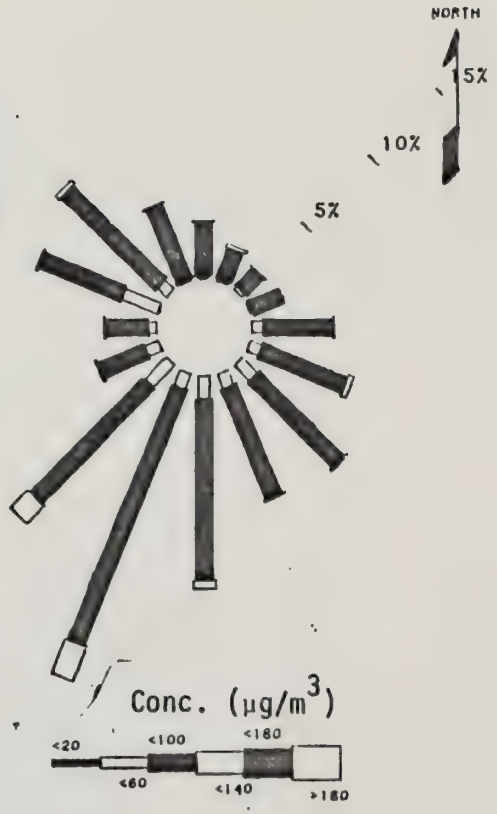


FIGURE 2.3.1.1-5

AB23 ANNUAL OZONE CONC. ROSE
JAN '82 - DEC '82

TOTAL % OF CALMS DISTRIBUTED (1.85%)
TOTAL NO. OF 1-HOUR SAMPLES - 7527

TABLE 2.3.1.1-13

SUMMARY OF AIR QUALITY TREND ANALYSIS, STATION AB23

Indicator Variable	Short-Term*	Long-Term**
NO_x	1. 2.68/327 2. 0.0001 3. -0.0161 4. 0.48	1.45/2519 0.29
NO	1. 1.31/327 2. 0.0001 3. -0.0102 4. 0.60	0.88/2560 0.17
NO_2	1. 1.43/330 2. 0.0001 3. -0.0056 4. 0.20	0.80/2522 0.0001 0.0002 0.01
O_3	1. 35.03/330 2. 0.0001 3. -0.0156 4. 0.08	37.33/2834 0.0001 0.0014 0.01
CO	1. 14.81/355 2. 0.0001 3. -0.0448 4. 0.06	290.79/2413 0.0001 -0.38 0.36
SO_2	1. 0.58/357 2. 0.24 3. 4.	0.37/2809 0.0001 0.00009 0.008
H_2S	1. 0.98/354 2. 0.93 3. 4.	0.55/2665 0.17

1. Mean/Number of paired observations
2. $\hat{\alpha}$ - to be compared with selected α. ($\alpha = 0.05$); if $\hat{\alpha} < \alpha$, trend exists
3. Slope - slope is ($\mu g/m3$) per day
4. r^2 value

* 1982
** 1975 - 1982

2.3.1.2 Particulates

This section presents summary tables of 24-hour maximum concentrations for suspended particulates at Stations AB23 and AB26. The monthly data samples are presented in each of the monthly data reports. Monitoring at Station AB26 was discontinued on July 27, 1982.

Also included in this section are a frequency distribution histogram of concentrations of particulate matter and particulate concentration roses.

Following is a list of tables and figures for this section:

TABLE 2.3.1.2-1

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

Station AB23

Item	By Month											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	6.3	9.0	12.1	42.2	25.6	30.2	28.1	25.7	21.5	26.9	6.9	6.4
Date	1/19/82	2/8/82	3/24/82	4/1/82	5/31/82	6/8/82	7/18/82	8/19/82	9/24/82	10/18/82	11/15/82	12/5/82

TABLE 2.3.1.2-2

MAXIMUM CONCENTRATIONS OF PARTICULATES, 1982

STATION AB26

Item	By Month											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
24-Hour Maximum Value ($\mu g/m^3$)	7.9	18.6	10.9	52.4	49.0	30.9	28.3	*				
Date	1/4/82	2/28/82	3/24/82	4/1/82	5/11/82	6/20/82	7/18/82					

* Monitoring of particulates at Station AB26 was discontinued on 7/27/82 in accordance with the requirements of the Interim Monitoring Program.

COMPOSITE PARTICULATE

FREQUENCY DISTRIBUTION 1982

STATION AB23

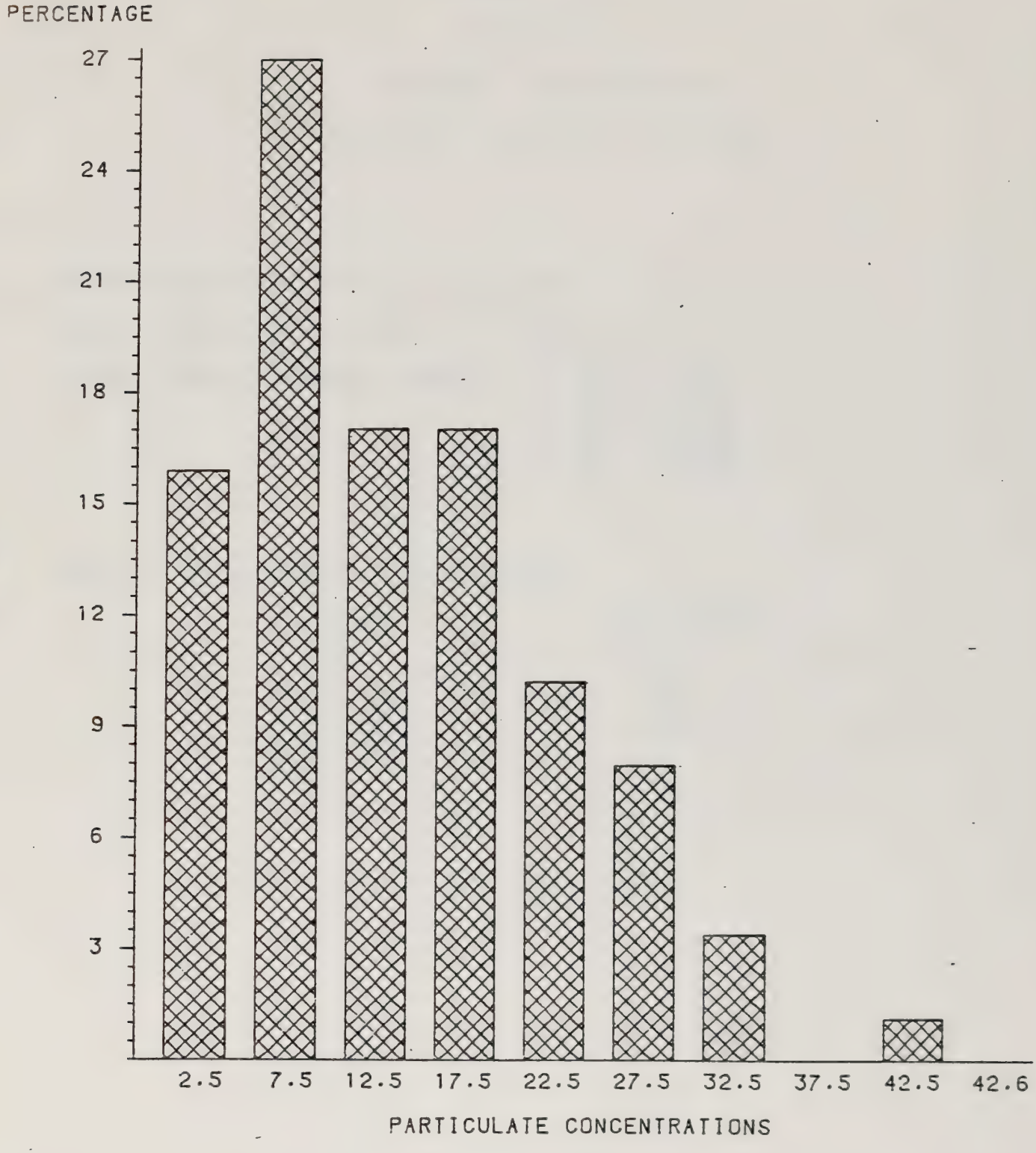


FIGURE 2.3.1.2-1

TABLE 2.3.1.2-3

PARTICULATES

C-b TRACT - RIO BLANCO COUNTY

For Calendar Year 1982 - Trailer 023

Number 24-Hour Measurements:	88		
Annual Arithmetic Mean ($\mu g/m^3$):	11.2		
5 Highest Monthly Averages ($\mu g/m^3$):	1.	42.2	4/1/82
	2.	30.2	6/8/82
	3.	28.1	6/28/82
	4.	28.1	7/18/82
	5.	26.9	10/18/82

Number of Hourly Concentrations in Ranges:

Range	No. of Values
<5 $\mu g/m^3$	30
5.0 - 14.9	31
15.0 - 24.9	18
25.0 - 34.9	8
35.0 - 75.9	1
>76	0

2.3.2 Trace Metals

No additional studies were conducted during this time period.

2.3.3 Meteorology

During this reporting period meteorological parameters were monitored at three stations; AA23, AB26, and AD20. Station AA23 is a 60-meter meteorological tower, colocated by air quality trailer AB23. Data are collected at the 10-meter, 30-meter, and 60-meter levels. Data at Stations AB26 and AD20 are collected at the 10-meter level.

Monitoring at Station AB26 was discontinued on July 27, 1982. This station is required to be reported on an "as can" basis, and no data are reported after March 1982.

Monitoring at Station AD20 was discontinued on July 26, 1982. Data from April 1982 through July 1982 are reported in this document.

Following is a list of statistical summary tables for meteorological parameters:

TABLE 2.3.3-1

TWO-YEAR SUMMARY OF METEOROLOGICAL STATISTICS

12/1/74 - 11/30/76

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	15529	55.6	21.7	15.0	100.0	470.1	39.0
WS2	16404	7.4	5.5	0.0	44.7	30.4	74.0
WD2	16362	193.2	80.2			6431.9	41.5
TMP2	16419	43.7	18.2	-8.7	87.8	332.6	41.8
BARP	15186	789.3	5.6	767.0	801.0	31.3	0.7
RAIN	0	•	•	•	•	•	•

12/1/76 - 11/30/78

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	13203	55.1	24.1	7.0	100.0	582.5	43.8
WS2	16449	6.9	4.9	0.0	36.0	24.3	72.0
WD2	15971	198.9	80.3			6442.9	40.3
TMP2	15928	46.0	18.1	-7.7	93.4	328.0	39.4
BARP	13795	787.7	5.4	768.0	800.7	29.4	0.7
RAIN	16149	0.2	1.2	0.0	46.0	1.4	749.1

12/1/78 - 11/30/80

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	15637	57.0	24.9	7.0	100.0	622.4	43.8
WS2	16852	6.0	4.3	0.0	40.0	18.8	71.7
WD2	16792	201.3	84.7			7178.2	42.1
TMP2	17008	45.3	19.5	-14.0	95.2	381.2	43.1
BARP	17288	785.1	5.0	725.8	797.1	25.3	0.6
RAIN	15884	0.2	1.2	0.0	42.0	1.4	740.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-1 (Contd)

12/1/80 - 5/31/82
TWO YEAR SUMMARY OF METEROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	11412	51.5	20.5	1.0	100.0	419.0	39.8
WS2	12168	5.6	4.2	0.0	25.0	17.7	74.9
WD2	12169	204.3	80.4			6465.1	39.4
TMP2	12428	43.8	16.6	-16.0	92.0	274.8	37.9
BARP	10341	785.6	5.4	748.0	801.0	29.0	0.7
RAIN	12145	0.2	1.2	0.0	37.0	1.5	769.8

*
RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{O}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=74	MONTH=12			
RH1	503	69.3	22.6	25.1	100.0	512.6	32.7
WS2	457	8.7	6.8	1.5	44.7	46.1	77.8
WD2	500	221.0	83.7			7012.9	37.9
TMP2	498	25.3	9.1	-3.7	49.6	82.9	36.0
BARP	108	785.9	4.1	776.7	794.9	16.8	0.5
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=1			
RH1	683	68.5	19.9	32.3	100.0	396.3	29.1
WS2	688	7.9	5.3	0.5	32.8	28.1	66.9
WD2	688	202.0	73.4			5384.1	36.3
TMP2	677	22.8	9.5	-6.6	43.8	90.8	41.8
BARP	0	.	.	.	.	.	.
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=10			
RH1	727	42.7	23.2	18.2	98.6	536.0	54.2
WS2	727	8.2	6.6	0.0	33.2	43.9	80.5
WD2	727	186.8	75.8			5742.2	40.6
TMP2	727	46.8	12.8	14.8	71.9	164.1	27.4
BARP	727	790.6	5.2	775.5	799.2	26.6	0.7
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=11			
RH1	711	53.3	21.9	20.0	98.2	478.1	41.0
WS2	711	7.4	5.7	0.3	33.7	32.2	76.8
WD2	711	201.7	78.7			6198.3	39.0
TMP2	711	32.1	13.0	4.0	63.0	168.4	40.4
BARP	711	789.1	7.4	767.0	800.5	55.3	0.9
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=12			
RH1	703	62.8	12.0	33.6	89.4	144.7	19.1
WS2	703	5.8	4.9	0.2	25.4	23.6	83.8
WD2	703	181.7	75.4			5681.9	41.5
TMP2	703	28.3	9.7	6.6	50.0	93.2	34.2
BARP	702	791.2	5.9	770.5	799.0	35.0	0.7
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=2			
RH1	654	75.2	16.2	37.2	100.0	262.3	21.5
WS2	654	8.1	5.0	0.7	24.3	24.7	61.1
WD2	654	197.8	74.6			5560.0	37.7
TMP2	657	24.1	9.0	-1.7	42.9	81.5	37.5
BARP	656	785.1	5.1	774.0	795.9	26.2	0.7
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=3			
RH1	522	74.7	17.8	38.1	100.0	316.4	23.8
WS2	549	10.2	5.8	0.0	38.7	33.8	57.2
WD2	549	208.1	68.0			4630.1	32.7
TMP2	543	31.2	11.2	-7.3	50.8	125.6	35.9
BARP	548	782.2	6.3	768.0	793.0	39.1	0.8
RAIN	0	.	.	.	.	.	.
			YEAR=75	MONTH=4			
RH1	711	69.5	22.2	34.7	100.0	494.3	32.0
WS2	711	9.5	6.7	0.6	43.6	45.1	70.5
WD2	711	211.5	71.9			5175.4	34.0
TMP2	708	34.9	11.0	6.5	62.9	120.8	31.4
BARP	711	782.4	4.6	769.0	792.0	21.1	0.6
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

** Months not in sequential order.

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=75 MONTH=5							
RH1	743	67.3	21.4	32.2	100.0	458.1	31.8
WS2	743	9.1	6.2	0.0	38.8	38.6	68.6
WD2	739	206.8	78.2			6120.8	37.8
TMP2	742	46.0	10.3	22.6	71.8	106.8	22.3
BARP	744	785.8	4.9	771.0	793.1	23.9	0.6
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=6							
RH1	431	68.7	21.4	35.8	100.0	456.3	31.1
WS2	615	8.3	5.8	0.9	28.0	33.8	69.8
WD2	615	194.3	81.2			6587.4	41.8
TMP2	614	56.1	11.3	34.9	83.6	128.5	20.2
BARP	616	788.2	3.9	774.0	794.0	15.5	0.5
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=7							
RH1	6	28.2	0.6	27.3	29.0	0.3	2.0
WS2	703	6.6	3.9	0.3	25.0	15.1	58.6
WD2	703	169.3	86.4			7468.8	51.1
TMP2	702	67.2	7.9	50.1	84.8	63.0	11.8
BARP	708	791.3	2.0	786.0	795.9	4.1	0.3
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=8							
RH1	694	32.8	16.0	15.0	93.8	254.8	48.7
WS2	694	8.0	5.0	0.5	22.3	25.0	62.4
WD2	694	184.6	76.4			5835.4	41.4
TMP2	694	64.8	8.8	40.5	82.8	77.6	13.6
BARP	695	791.4	1.6	781.2	795.0	2.5	0.2
RAIN	0	.	.	.	.	.	.
YEAR=75 MONTH=9							
RH1	672	38.9	18.3	19.3	94.9	334.5	47.0
WS2	672	6.1	4.1	0.3	21.0	16.9	67.4
WD2	672	193.3	91.3			8331.2	47.2
TMP2	672	56.2	10.0	29.3	78.5	99.0	17.7
BARP	672	793.5	2.6	787.0	800.6	6.5	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=1							
RH1	725	61.4	14.4	23.5	88.2	207.2	23.5
WS2	726	5.1	4.5	0.0	27.5	19.9	86.8
WD2	726	192.3	77.5			6013.5	40.3
TMP2	726	24.2	10.7	-8.7	47.8	115.5	44.5
BARP	726	791.3	5.5	777.0	801.0	30.5	0.7
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=10							
RH1	742	47.9	14.5	28.8	90.0	211.1	30.4
WS2	742	5.1	4.1	0.0	22.5	16.6	79.8
WD2	733	200.8	90.6			8210.1	45.1
TMP2	742	42.6	10.9	16.5	71.0	118.8	25.5
BARP	743	791.6	3.4	784.0	799.0	11.3	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=11							
RH1	717	52.5	14.1	27.6	89.7	198.8	26.9
WS2	717	4.3	3.2	0.0	17.8	10.5	76.0
WD2	709	193.0	92.3			8512.3	47.8
TMP2	717	34.2	13.4	-6.4	59.1	179.9	39.2
BARP	697	791.9	4.7	777.0	800.0	22.3	0.6
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=76 MONTH=2							
RH1	696	57.4	19.2	22.6	89.6	368.6	33.5
WS2	696	8.7	6.3	0.4	34.2	39.5	72.2
WD2	693	192.2	62.0			3838.0	32.2
TMP2	696	31.7	9.3	5.3	48.8	87.3	29.5
BARP	689	787.9	6.4	774.0	800.0	40.9	0.8
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=3							
RH1	723	55.7	19.0	23.6	90.6	360.0	34.0
WS2	723	7.8	6.2	0.1	28.9	38.4	79.6
WD2	722	203.1	76.9			5919.6	37.9
TMP2	723	29.6	10.7	6.1	52.2	115.5	36.3
BARP	721	785.2	6.0	770.0	795.0	35.8	0.8
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=4							
RH1	636	51.6	22.1	20.8	95.1	490.6	42.9
WS2	636	8.4	5.7	0.0	25.4	32.6	68.3
WD2	632	195.4	74.5			5554.9	38.1
TMP2	636	41.7	8.4	22.6	63.7	70.3	20.1
BARP	635	785.9	4.8	770.7	796.0	23.3	0.6
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=5							
RH1	675	50.8	19.4	23.3	90.8	377.6	38.2
WS2	675	6.5	4.4	0.3	23.8	19.1	67.1
WD2	661	189.4	90.5			8187.2	47.8
TMP2	675	52.0	8.9	27.6	74.8	79.5	17.2
BARP	603	789.6	3.0	783.0	796.0	9.1	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=6							
RH1	716	43.0	17.3	26.9	96.1	299.4	40.3
WS2	716	9.5	5.8	0.8	27.7	33.4	61.1
WD2	710	183.0	75.7			5725.4	41.3
TMP2	716	59.5	11.9	21.8	82.6	140.8	19.9
BARP	701	789.8	2.9	782.0	797.0	8.5	0.4
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=7							
RH1	720	45.6	14.3	28.8	93.9	204.1	31.3
WS2	720	6.5	3.7	0.4	22.1	13.8	57.2
WD2	707	175.3	86.0			7404.1	49.1
TMP2	721	69.1	8.8	50.5	87.8	77.7	12.8
BARP	647	792.4	2.1	787.0	797.1	4.2	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=8							
RH1	700	47.8	14.8	29.6	95.8	220.3	31.1
WS2	707	8.7	5.8	0.2	36.8	33.3	66.9
WD2	695	173.4	69.7			4854.6	40.2
TMP2	700	64.1	8.3	43.6	81.2	68.7	12.9
BARP	707	793.1	2.6	785.2	798.0	6.5	0.3
RAIN	0	.	.	.	.	.	.
YEAR=76 MONTH=9							
RH1	719	56.4	19.1	30.3	94.0	364.8	33.9
WS2	719	5.5	3.9	0.0	20.2	15.3	70.7
WD2	708	191.4	84.3			7108.6	44.1
TMP2	719	56.1	10.0	35.1	81.7	100.7	17.9
BARP	719	792.9	2.5	786.0	801.0	6.4	0.3
RAIN	0	.	.	.	.	.	.

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=76 MONTH=12				
RH1	742	52.7	14.1	29.2	89.0	197.7	26.7
WS2	742	4.8	3.6	0.2	24.3	13.1	75.4
WD2	740	189.0	76.4			5835.3	40.4
TMP2	669	26.0	7.8	8.0	46.0	60.8	30.0
BARP	742	790.5	4.8	779.0	800.7	23.4	0.6
RAIN	535	0.1	0.3	0.0	3.0	0.1	385.4
			YEAR=77	MONTH=1			
RH1	739	73.9	14.6	43.0	100.0	213.4	19.8
WS2	739	5.2	4.0	0.0	19.8	16.2	76.9
WD2	739	180.1	71.9			5163.0	39.9
TMP2	739	22.6	9.4	-7.7	44.3	88.5	41.6
BARP	739	788.1	4.8	773.0	799.9	22.8	0.6
RAIN	686	0.1	0.5	0.0	5.0	0.3	442.8
			YEAR=77	MONTH=10			
RH1	0	.	.	.	.	.	.
WS2	735	5.2	3.8	0.6	20.9	14.6	73.1
WD2	730	191.4	65.0			4230.5	34.0
TMP2	727	40.2	9.7	10.0	72.0	93.2	24.0
BARP	0	.	.	.	.	.	.
RAIN	736	0.1	1.4	0.0	30.0	1.8	1137.5
			YEAR=77	MONTH=11			
RH1	0	.	.	.	.	.	.
WS2	660	6.8	5.0	0.0	24.0	24.5	72.6
WD2	662	205.5	72.1			5202.6	35.1
TMP2	662	38.1	12.8	1.0	64.0	164.5	33.6
BARP	0	.	.	.	.	.	.
RAIN	705	0.2	1.2	0.0	13.0	1.5	602.6
			YEAR=77	MONTH=12			
RH1	531	65.5	23.6	10.0	99.0	555.9	36.0
WS2	479	7.5	5.0	0.5	23.0	24.5	65.6
WD2	455	201.2	70.7			4999.5	35.2
TMP2	467	39.5	9.4	17.4	56.0	88.2	23.8
BARP	0	.	.	.	.	.	.
RAIN	740	0.1	0.8	0.0	11.0	0.6	684.8
			YEAR=77	MONTH=2			
RH1	670	64.3	17.4	33.8	100.0	301.8	27.0
WS2	670	5.0	3.5	0.2	24.9	12.5	71.3
WD2	670	209.7	85.7			7347.9	40.9
TMP2	670	28.9	9.4	8.0	53.4	88.0	32.5
BARP	670	790.6	5.3	774.0	798.9	28.0	0.7
RAIN	527	0.1	0.5	0.0	7.0	0.3	512.4
			YEAR=77	MONTH=3			
RH1	732	70.2	19.6	37.8	100.0	385.5	28.0
WS2	733	8.1	5.8	0.0	25.8	33.7	72.1
WD2	708	205.6	80.4			6464.8	39.1
TMP2	727	27.7	10.4	4.8	53.6	107.7	37.5
BARP	733	783.9	6.0	770.6	795.7	35.6	0.8
RAIN	680	0.2	1.0	0.0	10.0	1.0	431.7
			YEAR=77	MONTH=4			
RH1	716	67.2	22.6	34.5	100.0	509.3	33.6
WS2	716	6.4	4.3	0.3	22.9	18.4	66.7
WD2	716	208.6	87.4			7639.0	41.9
TMP2	716	43.4	12.4	12.8	67.7	153.8	28.6
BARP	716	789.3	5.0	775.8	798.0	25.0	0.6
RAIN	713	0.2	0.9	0.0	10.0	0.8	500.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{0}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=77 MONTH=5							
RH1	0						
WS2	725	10.2	6.6	0.8	33.3	43.8	65.1
WD2	725	149.3	69.5			4827.9	34.9
TMP2	441	49.4	9.3	28.2	71.8	87.3	18.9
BARP	739	786.1	3.6	776.1	797.0	12.7	0.5
RAIN	705	0.2	1.1	0.0	16.0	1.1	685.3
YEAR=77 MONTH=6							
RH1	0						
WS2	719	7.8	4.7	0.8	20.5	22.3	60.7
WD2	719	197.2	78.7			6188.2	39.9
TMP2	517	67.6	8.8	45.9	82.4	77.5	13.0
BARP	719	791.3	2.2	786.0	797.0	4.8	0.3
RAIN	655	0.0	0.2	0.0	2.0	0.0	628.4
YEAR=77 MONTH=7							
RH1	429	31.6	17.1	7.8	93.2	292.8	54.2
WS2	443	8.9	4.9	1.2	24.2	24.4	55.1
WD2	443	193.9	68.4			4683.4	35.3
TMP2	443	69.6	8.1	52.1	83.2	65.9	11.7
BARP	669	794.2	2.3	789.0	799.0	5.1	0.3
RAIN	667	0.3	2.2	0.0	43.0	4.7	776.4
YEAR=77 MONTH=8							
RH1	694	44.7	23.0	10.7	100.0	529.5	51.5
WS2	608	6.6	4.0	0.8	20.8	15.9	60.3
WD2	415	200.7	85.6			7331.2	42.7
TMP2	640	65.8	10.2	38.0	85.9	103.4	15.5
BARP	728	793.3	2.5	783.7	799.0	6.1	0.3
RAIN	708	0.3	2.2	0.0	38.0	5.0	711.1
YEAR=77 MONTH=9							
RH1	235	34.1	16.1	15.4	99.0	259.4	47.3
WS2	697	7.3	4.5	1.0	23.8	20.3	61.8
WD2	691	194.2	54.4			2957.8	28.0
TMP2	692	58.6	17.3	25.0	93.4	299.7	29.5
BARP	0						
RAIN	716	0.2	1.6	0.0	22.0	2.7	798.8
YEAR=78 MONTH=1							
RH1	722	73.8	15.7	32.0	97.0	247.8	21.3
WS2	735	5.0	3.6	0.0	24.0	12.6	70.8
WD2	692	193.9	80.1			6422.0	41.3
TMP2	709	45.6	5.1	28.8	56.0	26.0	11.2
BARP	377	783.7	6.0	768.1	794.4	35.6	0.8
RAIN	717	0.1	0.5	0.0	4.0	0.2	503.4
YEAR=78 MONTH=10							
RH1	743	44.2	22.4	12.0	97.0	500.2	50.6
WS2	741	5.7	4.5	1.0	32.0	19.9	78.7
WD2	721	200.8	105.2			11075.1	52.4
TMP2	744	50.8	10.7	26.0	77.0	115.2	21.1
BARP	744	786.0	3.0	776.0	792.0	9.3	0.4
RAIN	720	0.0	0.2	0.0	4.0	0.0	1497.7
YEAR=78 MONTH=11							
RH1	613	63.3	22.2	19.0	99.0	494.7	35.1
WS2	714	5.6	4.7	1.0	30.0	21.7	83.6
WD2	696	211.8	85.3			7267.8	40.2
TMP2	720	33.6	12.9	4.0	65.0	167.3	38.5
BARP	720	783.4	4.1	773.0	792.0	16.6	0.5
RAIN	629	0.3	1.5	0.0	18.0	2.1	519.7

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=78 MONTH=2				
RH1	618	78.4	17.1	16.0	96.0	291.0	24.2
WS2	630	5.6	3.7	1.0	20.0	13.6	65.1
WD2	636	187.0	74.4			5541.3	39.8
TMP2	630	27.4	8.1	4.5	43.3	65.3	29.5
BARP	582	785.1	6.6	769.4	798.3	43.1	0.8
RAIN	614	0.2	0.9	0.0	12.0	0.7	509.4
			YEAR=78	MONTH=3			
RH1	740	65.9	20.2	20.0	96.0	407.3	30.6
WS2	699	4.9	3.3	0.0	20.0	11.1	68.5
WD2	640	186.2	83.0			6884.7	44.6
TMP2	712	35.6	9.5	12.0	58.3	91.0	26.8
BARP	727	786.2	5.1	774.6	797.0	25.8	0.6
RAIN	699	0.5	1.8	0.0	20.0	3.3	384.7
			YEAR=78	MONTH=4			
RH1	720	52.6	22.5	16.0	95.0	506.7	42.8
WS2	690	7.6	4.9	1.0	28.0	23.7	64.9
WD2	661	211.1	70.9			5022.2	33.6
TMP2	696	42.0	8.4	23.0	64.0	70.6	20.0
BARP	696	784.1	3.5	776.0	792.0	12.1	0.4
RAIN	683	0.1	0.8	0.0	9.0	0.6	598.5
			YEAR=78	MONTH=5			
RH1	742	48.7	24.8	11.0	94.0	615.6	50.9
WS2	725	8.3	5.1	0.0	29.0	25.6	61.1
WD2	727	206.9	86.6			7504.1	41.9
TMP2	733	48.2	11.5	25.0	75.0	132.2	23.8
BARP	737	783.9	4.8	773.0	795.0	22.7	0.6
RAIN	700	0.2	1.1	0.0	23.8	1.3	642.7
			YEAR=78	MONTH=6			
RH1	609	40.9	21.2	12.0	96.0	448.3	51.8
WS2	717	9.2	5.7	0.0	30.0	32.3	61.6
WD2	707	208.5	81.8			6686.9	39.2
TMP2	717	62.2	10.4	36.0	82.0	109.0	16.8
BARP	681	789.3	2.9	782.0	795.0	8.2	0.4
RAIN	598	0.1	0.6	0.0	8.0	0.3	693.2
			YEAR=78	MONTH=7			
RH1	744	37.6	20.6	9.0	94.0	425.4	54.9
WS2	699	8.4	4.8	1.0	25.0	22.8	56.9
WD2	691	189.5	83.5			6976.0	44.1
TMP2	696	69.7	8.6	45.0	87.0	74.4	12.4
BARP	650	789.5	2.5	774.0	793.0	6.1	0.3
RAIN	669	0.1	1.8	0.0	46.0	3.3	1561.8
			YEAR=78	MONTH=8			
RH1	744	38.2	20.3	7.0	94.0	413.1	53.2
WS2	744	8.5	5.4	0.0	29.0	29.7	63.9
WD2	724	195.1	87.7			7699.7	45.0
TMP2	744	65.3	10.0	36.0	85.0	99.8	15.3
BARP	737	789.1	4.4	776.0	796.0	19.5	0.6
RAIN	638	0.0	0.6	0.0	13.0	0.3	1898.3
			YEAR=78	MONTH=9			
RH1	720	44.4	19.8	8.0	97.0	391.6	44.5
WS2	689	6.6	5.4	1.0	36.0	29.3	82.1
WD2	663	207.8	90.5			8193.1	43.5
TMP2	717	58.7	13.6	27.0	83.0	183.6	23.1
BARP	689	784.4	5.0	768.0	794.0	25.4	0.6
RAIN	717	0.1	0.8	0.0	14.0	0.6	999.4

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{0}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=78 MONTH=12				
RH1	718	73.0	15.5	31.0	99.0	240.0	21.2
WS2	713	8.3	6.2	1.0	40.0	38.4	74.9
WD2	690	206.9	80.0			6403.0	38.7
TMP2	731	20.9	11.8	-10.0	41.0	138.5	56.4
BARP	732	781.1	6.5	766.0	794.0	42.5	0.8
RAIN	404	0.1	0.5	0.0	7.0	0.2	550.0
			YEAR=79	MONTH=1			
RH1	738	74.4	17.1	35.0	100.0	292.4	23.0
WS2	737	5.6	4.2	1.0	22.0	17.6	74.3
WD2	730	196.1	83.9			7041.2	42.8
TMP2	742	17.5	11.3	-14.0	37.0	128.7	64.8
BARP	742	781.2	4.9	770.2	792.0	24.2	0.6
RAIN	527	0.2	0.9	0.0	17.0	0.8	446.0
			YEAR=79	MONTH=10			
RH1	744	55.4	25.8	11.0	100.0	663.5	46.5
WS2	739	5.8	4.1	1.0	23.5	16.7	70.4
WD2	739	214.9	88.5			7829.3	41.2
TMP2	741	48.6	15.0	7.4	82.1	225.1	30.9
BARP	741	786.0	4.6	772.5	793.5	21.2	0.6
RAIN	733	0.2	1.4	0.0	17.0	2.0	567.5
			YEAR=79	MONTH=11			
RH1	695	72.6	22.0	21.0	100.0	484.1	30.3
WS2	418	4.1	2.3	1.0	13.9	5.2	54.9
WD2	418	191.0	81.4			6629.6	42.6
TMP2	428	32.6	9.5	7.0	55.1	91.0	29.3
BARP	690	785.6	5.1	773.0	796.3	26.0	0.6
RAIN	703	0.3	2.4	0.0	42.0	5.7	801.8
			YEAR=79	MONTH=12			
RH1	309	68.0	19.1	33.0	100.0	365.9	28.2
WS2	708	4.5	2.9	1.0	22.0	8.2	63.8
WD2	708	173.2	93.2			8687.9	53.8
TMP2	737	27.9	9.6	1.3	48.8	92.4	34.4
BARP	744	787.4	4.5	773.3	797.1	20.6	0.6
RAIN	685	0.1	0.4	0.0	7.0	0.2	653.4
			YEAR=79	MONTH=2			
RH1	662	69.4	18.3	29.0	99.0	334.9	26.4
WS2	669	6.4	4.7	1.0	31.0	21.8	72.6
WD2	659	181.1	76.5			5854.3	42.3
TMP2	672	27.8	8.9	2.0	51.0	80.0	32.2
BARP	672	782.7	4.6	770.5	793.4	21.3	0.6
RAIN	623	0.1	0.6	0.0	8.0	0.3	560.9
			YEAR=79	MONTH=3			
RH1	738	73.2	18.4	30.0	100.0	337.7	25.1
WS2	733	5.5	3.9	1.0	23.7	15.6	72.0
WD2	733	199.3	92.1			8478.4	46.2
TMP2	743	31.9	7.2	10.4	48.4	51.3	22.4
BARP	744	782.7	5.4	725.8	792.5	29.3	0.7
RAIN	703	0.2	0.9	0.0	12.0	0.8	427.0
			YEAR=79	MONTH=4			
RH1	594	62.0	23.0	24.0	100.0	528.4	37.1
WS2	708	7.0	4.5	1.1	22.2	20.5	64.7
WD2	708	211.1	75.6			5713.3	35.8
TMP2	718	41.7	11.8	14.1	63.8	140.4	28.4
BARP	718	781.9	4.5	765.5	789.0	20.5	0.6
RAIN	695	0.2	0.8	0.0	10.0	0.6	458.4

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=79	MONTH=5			
RH1	466	64.0	26.1	21.0	100.0	682.0	40.8
WS2	725	5.9	3.8	1.0	22.0	14.2	63.8
WD2	724	213.6	94.6			8951.1	44.3
TMP2	743	49.0	12.2	26.0	71.3	148.7	24.9
BARP	744	783.5	4.7	771.0	790.7	21.9	0.6
RAIN	691	0.5	2.5	0.0	34.0	6.5	527.2
			YEAR=79	MONTH=6			
RH1	657	44.4	18.5	16.0	100.0	340.8	41.6
WS2	718	7.4	4.7	1.1	25.1	22.4	64.0
WD2	718	201.8	81.2			6591.5	40.2
TMP2	719	61.9	11.8	32.6	85.8	140.1	19.1
BARP	719	786.9	4.0	776.4	795.0	16.4	0.5
RAIN	720	0.1	0.6	0.0	6.0	0.3	1043.3
			YEAR=79	MONTH=7			
RH1	744	49.0	21.6	15.0	100.0	465.0	44.0
WS2	717	6.2	3.7	1.2	20.3	13.9	60.1
WD2	717	185.8	81.9			6711.1	44.1
TMP2	718	68.7	9.7	48.4	87.9	94.4	14.1
BARP	727	788.2	2.0	783.9	793.9	3.9	0.3
RAIN	729	0.1	1.6	0.0	41.0	2.6	1391.8
			YEAR=79	MONTH=8			
RH1	743	55.8	24.9	15.0	100.0	622.1	45.3
WS2	742	5.5	3.4	1.1	19.4	11.5	61.1
WD2	742	189.6	84.8			7194.3	44.7
TMP2	744	65.6	12.0	46.8	95.2	143.0	18.2
BARP	744	787.9	2.1	783.1	793.3	4.3	0.3
RAIN	690	0.1	0.9	0.0	18.0	0.8	731.9
			YEAR=79	MONTH=9			
RH1	718	40.7	17.7	15.0	100.0	312.2	43.4
WS2	711	5.6	3.3	1.0	20.3	10.9	58.7
WD2	711	203.0	90.1			8115.4	44.4
TMP2	718	63.1	11.9	33.6	88.6	142.0	18.9
BARP	718	788.8	1.9	784.0	792.9	3.6	0.2
RAIN	664	0.0	0.5	0.0	10.0	0.2	1077.3
			YEAR=80	MONTH=1			
RH1	253	73.7	19.5	27.0	96.0	379.5	26.4
WS2	732	7.1	6.1	1.0	28.6	37.2	86.0
WD2	732	215.7	74.9			5609.2	34.7
TMP2	743	24.8	9.0	3.0	42.9	81.1	36.3
BARP	743	782.1	5.6	766.4	792.1	31.8	0.7
RAIN	531	0.2	1.1	0.0	13.0	1.3	534.8
			YEAR=80	MONTH=10			
RH1	743	51.9	25.3	7.0	94.0	641.3	48.8
WS2	743	4.8	3.6	0.0	20.0	12.6	74.2
WD2	743	218.4	88.1			7765.4	40.4
TMP2	742	45.4	13.1	17.0	74.0	171.6	28.9
BARP	741	787.8	5.3	773.0	795.0	28.3	0.7
RAIN	732	0.2	1.2	0.0	18.0	1.5	775.9
			YEAR=80	MONTH=11			
RH1	718	57.8	23.4	13.0	98.0	545.5	40.4
WS2	703	5.0	3.8	0.0	19.0	14.1	75.7
WD2	684	193.7	78.7			6192.8	40.6
TMP2	718	47.8	8.4	23.0	65.0	71.0	17.6
BARP	718	786.2	4.0	775.0	795.0	15.7	0.5
RAIN	674	0.1	0.9	0.0	13.0	0.8	875.5

*
RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
			YEAR=80	MONTH=2			
RH1	674	67.1	20.1	18.0	95.0	405.4	30.0
WS2	681	5.5	3.5	1.0	21.2	12.0	63.0
WD2	682	198.9	78.2			6117.5	39.3
TMP2	694	30.3	8.8	1.2	49.3	76.9	29.0
BARP	694	784.2	5.6	770.9	793.3	31.5	0.7
RAIN	618	0.2	1.1	0.0	18.0	1.3	503.6
			YEAR=80	MONTH=3			
RH1	572	65.8	19.8	22.0	99.0	392.5	30.1
WS2	733	6.4	4.1	0.0	23.0	16.6	63.4
WD2	733	192.9	100.5			10106.7	52.1
TMP2	735	29.9	7.3	8.1	48.0	52.8	24.3
BARP	735	780.4	4.1	772.7	790.0	16.7	0.5
RAIN	667	0.3	1.3	0.0	12.0	1.7	383.7
			YEAR=80	MONTH=4			
RH1	690	53.2	23.1	13.0	98.0	533.7	43.4
WS2	719	5.5	3.5	0.0	17.0	12.0	62.9
WD2	719	195.4	98.8			9763.9	50.6
TMP2	719	41.1	12.0	16.0	68.0	144.6	29.3
BARP	719	784.6	4.3	774.0	793.0	18.2	0.5
RAIN	715	0.1	1.0	0.0	13.0	1.1	836.7
			YEAR=80	MONTH=5			
RH1	734	60.6	24.7	11.0	98.0	611.0	40.8
WS2	684	6.5	5.0	0.0	26.0	24.7	76.6
WD2	684	203.2	75.1			5646.4	37.0
TMP2	684	48.5	9.2	31.0	74.0	85.4	19.1
BARP	684	782.5	3.9	773.0	789.0	14.9	0.5
RAIN	573	0.2	0.8	0.0	7.0	0.6	498.7
			YEAR=80	MONTH=6			
RH1	659	31.2	15.9	11.0	90.0	253.2	50.9
WS2	714	7.7	5.0	0.0	23.0	25.1	65.1
WD2	713	211.9	66.6			4432.1	31.4
TMP2	714	65.5	10.0	38.0	88.0	99.3	15.2
BARP	714	786.5	2.9	779.0	792.0	8.6	0.4
RAIN	706	0.0	0.1	0.0	2.0	0.0	1249.4
			YEAR=80	MONTH=7			
RH1	742	42.4	24.2	8.0	93.0	587.9	57.2
WS2	647	5.4	3.6	0.0	16.0	12.8	66.3
WD2	647	199.0	82.7			6839.2	41.6
TMP2	647	69.4	9.0	51.0	88.0	81.5	13.0
BARP	647	789.2	1.8	784.0	793.0	3.1	0.2
RAIN	649	0.1	0.8	0.0	16.0	0.7	847.2
			YEAR=80	MONTH=8			
RH1	606	38.4	21.7	8.0	94.0	470.6	56.6
WS2	738	6.8	4.5	0.0	19.0	20.0	66.1
WD2	738	212.5	73.3			5373.1	34.5
TMP2	738	66.0	9.6	40.0	86.0	92.7	14.6
BARP	738	786.5	2.3	780.0	792.0	5.5	0.3
RAIN	734	0.1	0.7	0.0	11.0	0.5	804.8
			YEAR=80	MONTH=9			
RH1	720	42.3	23.7	8.0	93.0	562.7	56.1
WS2	720	5.8	4.5	0.0	22.0	19.8	76.8
WD2	720	214.9	81.2			6596.8	37.8
TMP2	720	59.7	9.2	34.0	81.0	84.6	15.4
BARP	720	787.8	2.4	781.0	793.0	5.7	0.3
RAIN	718	0.1	0.8	0.0	15.0	0.6	1501.2

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=80 MONTH=12							
RH1	588	58.0	22.8	17.0	96.0	518.9	39.2
WS2	736	4.9	4.6	0.0	24.0	20.8	93.9
WD2	743	202.0	71.4			5096.3	35.3
TMP2	743	36.0	8.5	13.0	55.0	71.7	23.5
BARP	743	787.5	4.8	775.0	796.0	23.2	0.6
RAIN	708	0.1	0.4	0.0	6.0	0.2	848.7
YEAR=81 MONTH=1							
RH1	739	65.6	21.3	21.0	99.0	455.1	32.5
WS2	694	3.8	3.1	1.0	20.0	9.6	81.2
WD2	688	213.9	75.0			5620.4	35.0
TMP2	739	30.8	7.3	13.0	51.0	54.0	23.9
BARP	744	786.5	3.8	778.0	794.0	14.1	0.5
RAIN	737	0.1	0.6	0.0	10.0	0.4	661.3
YEAR=81 MONTH=10							
RH1	668	44.2	14.6	21.0	65.0	212.2	32.9
WS2	711	5.7	4.6	1.0	25.0	21.0	80.1
WD2	711	201.4	73.4			5390.2	36.5
TMP2	728	43.2	9.4	18.0	73.0	87.6	21.7
BARP	727	782.2	5.2	748.0	794.0	27.5	0.7
RAIN	712	0.4	2.2	0.0	25.0	4.8	510.4
YEAR=81 MONTH=11							
RH1	720	43.3	13.8	21.0	68.0	191.3	31.9
WS2	708	5.1	4.3	1.0	23.0	18.4	83.4
WD2	708	206.5	72.2			5212.0	35.0
TMP2	719	37.4	10.6	9.0	58.0	113.0	28.4
BARP	719	784.4	5.1	771.0	799.0	26.4	0.7
RAIN	480	0.1	0.5	0.0	8.0	0.2	951.7
YEAR=81 MONTH=12							
RH1	684	42.2	10.6	22.0	64.0	111.9	25.1
WS2	736	6.0	4.4	1.0	24.0	19.6	73.6
WD2	736	189.5	72.5			5256.0	38.2
TMP2	744	29.8	10.8	4.0	55.0	116.6	36.2
BARP	744	782.1	4.7	768.0	791.0	22.3	0.6
RAIN	735	0.2	0.9	0.0	10.0	0.8	545.5
YEAR=81 MONTH=2							
RH1	669	59.7	21.3	17.0	100.0	452.8	35.6
WS2	662	5.2	3.9	1.0	19.0	15.0	74.9
WD2	662	197.7	76.0			5769.9	38.4
TMP2	667	30.3	10.7	-3.0	53.0	114.9	35.4
BARP	667	786.9	4.7	770.0	797.0	22.3	0.6
RAIN	670	0.1	0.4	0.0	5.0	0.1	762.9
YEAR=81 MONTH=3							
RH1	389	69.2	15.8	37.0	99.0	248.4	22.8
WS2	732	5.0	3.7	1.0	23.0	13.6	73.4
WD2	732	202.4	81.4			6630.5	40.2
TMP2	740	33.0	6.6	17.0	55.0	43.5	20.0
BARP	744	787.7	5.6	770.0	796.0	31.6	0.7
RAIN	567	0.2	0.9	0.0	10.0	0.8	397.7
YEAR=81 MONTH=4							
RH1	675	55.8	13.1	40.0	86.0	171.2	23.4
WS2	713	6.8	4.5	1.0	19.0	19.9	65.7
WD2	713	205.5	79.4			6307.9	38.6
TMP2	720	47.9	11.1	16.0	70.0	123.9	23.2
BARP	720	788.8	4.3	775.0	801.0	18.3	0.5
RAIN	719	0.1	0.7	0.0	10.0	0.5	872.9

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
YEAR=81 MONTH=5							
RH1	635	64.3	13.3	42.0	86.0	178.0	20.7
WS2	665	5.8	4.3	1.0	22.0	18.8	75.1
WD2	665	201.5	85.8			7358.9	42.6
TMP2	722	48.7	10.3	28.0	76.0	106.6	21.2
BARP	500	785.0	4.6	774.0	795.0	21.2	0.6
RAIN	695	0.4	1.9	0.0	25.0	3.6	537.6
YEAR=81 MONTH=6							
RH1	653	55.3	12.5	41.0	85.0	155.0	22.5
WS2	605	6.6	4.6	1.0	22.0	21.1	69.5
WD2	605	216.2	86.3			7447.5	39.9
TMP2	610	65.7	13.5	30.0	91.0	181.5	20.5
BARP	480	787.4	3.9	779.0	798.0	15.0	0.5
RAIN	720	0.2	2.0	0.0	37.0	3.9	1063.8
YEAR=81 MONTH=7							
RH1	712	57.7	14.0	42.0	87.0	195.7	24.2
WS2	671	5.3	3.5	1.0	17.0	12.2	66.1
WD2	671	193.5	82.3			6778.1	42.5
TMP2	684	67.6	10.9	43.0	92.0	119.3	16.1
BARP	648	788.0	1.8	784.0	793.0	3.2	0.2
RAIN	744	0.2	1.1	0.0	13.0	1.2	634.8
YEAR=81 MONTH=8							
RH1	573	39.6	12.0	21.0	67.0	143.0	30.2
WS2	666	4.8	3.3	1.0	23.0	11.1	68.7
WD2	666	195.8	88.1			7763.2	45.0
TMP2	681	65.0	9.9	47.0	87.0	98.7	15.3
BARP	681	790.0	2.4	784.0	795.0	5.6	0.3
RAIN	710	0.1	1.4	0.0	34.0	2.0	1421.1
YEAR=81 MONTH=9							
RH1	720	37.7	13.0	21.0	67.0	168.8	34.4
WS2	668	5.5	4.0	1.0	21.0	15.9	72.4
WD2	668	193.0	79.7			6358.6	41.3
TMP2	677	59.8	9.1	34.0	80.0	82.5	15.2
BARP	677	788.4	3.5	782.0	798.0	12.3	0.4
RAIN	720	0.2	1.7	0.0	30.0	2.8	1024.8
YEAR=82 MONTH=1							
RH1	581	54.6	29.0	1.0	100.0	840.1	53.1
WS2	642	6.0	4.0	1.0	20.0	16.4	67.6
WD2	642	218.1	93.7			8782.6	43.0
TMP2	654	49.1	11.0	24.0	76.0	121.3	22.4
BARP	727	780.4	5.7	767.0	794.0	32.3	0.7
RAIN	648	0.1	0.9	0.0	12.0	0.9	679.8
YEAR=82 MONTH=2							
RH1	615	44.5	12.2	23.0	65.0	149.4	27.4
WS2	640	4.8	3.3	1.0	19.0	11.2	70.0
WD2	640	206.7	72.4			5241.5	35.0
TMP2	653	25.7	14.7	-16.0	54.0	216.7	57.3
BARP	526	782.6	4.1	773.0	791.0	16.6	0.5
RAIN	589	0.1	0.7	0.0	11.0	0.5	627.0
YEAR=82 MONTH=3							
RH1	585	42.9	17.7	7.0	100.0	311.8	41.1
WS2	639	7.2	4.9	1.0	24.0	23.7	68.0
WD2	639	215.6	63.0			3972.1	29.2
TMP2	647	34.0	8.0	15.0	52.0	63.8	23.5
BARP	0	.	.	.	.	.	.
RAIN	697	0.1	0.5	0.0	5.0	0.2	580.7

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (°F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

TABLE 2.3.3-2 (Contd)

MONTHLY METEOROLOGICAL STATISTICS

YEAR=82 MONTH=4

VARIABLE *	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	VARIANCE	C.V.
RH1	625	43.3	28.0	8.0	100.0	781.9	64.6
WS2	638	7.0	4.7	1.0	23.0	22.4	67.5
WD2	638	204.0	89.7			8044.4	44.0
TMP2	646	40.0	12.2	11.0	67.0	148.5	30.5
BARP	0	.	.	.	.	.	.
RAIN	720	0.1	0.8	0.0	11.0	0.6	687.3

YEAR=82 MONTH=5

RH1	581	54.6	29.0	1.0	100.0	840.1	53.1
WS2	642	6.0	4.0	1.0	20.0	16.4	67.6
WD2	642	218.1	93.7			8782.6	43.0
TMP2	654	49.1	11.0	24.0	76.0	121.3	22.4
BARP	294	778.3	3.1	772.0	785.0	9.7	0.4
RAIN	574	0.3	1.8	0.0	25.0	3.2	558.8

*

RH1 - Relative Humidity (%)
WS2 - Wind Speed @ 10M (MPH)
WD2 - Wind Direction @ 10M (Deg.)
TMP2 - Temperature @ 10M (^{o}F)
BARP - Barametric Pressure (millibars)
RAIN - Precipitation (inches)

Climatological
Records

2.3.3.1 Climatological Records

This section presents low altitude climatological data for temperature, relative humidity, and direct solar radiation. The Colorado climatological data for temperature are also presented here. No new data for snowfall and snow depth are available at report time.

Figure 2.3.3.1-1 shows monitoring stations presented in this section.

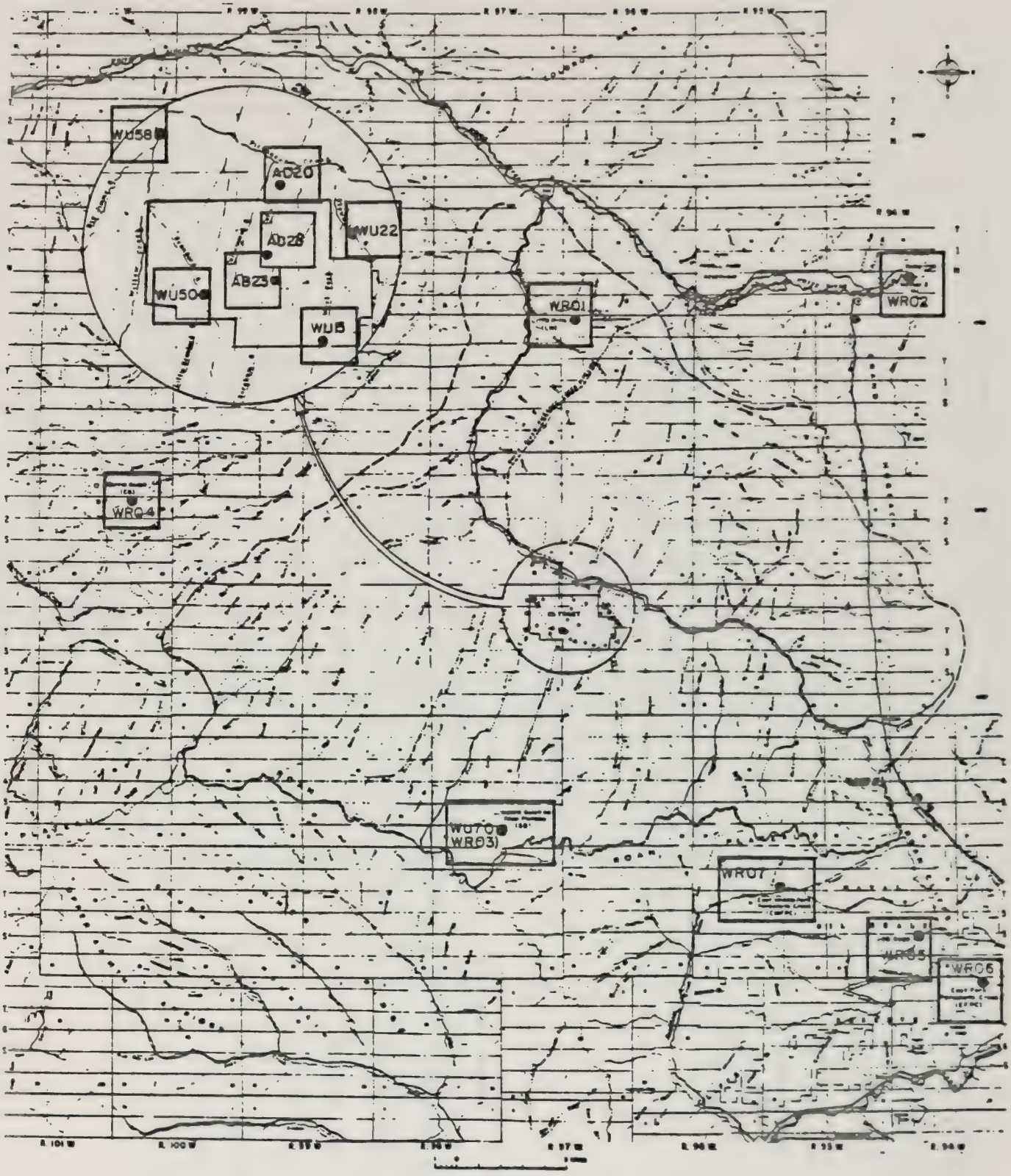


FIGURE 2.3.3.1-1

CLIMATOLOGICAL MONITORING NETWORK

TABLE 2.3.3.1-1

METEOROLOGICAL SUMMARY: TEMPERATURE AND RELATIVE HUMIDITY

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)	13	10	12	11	19	24	31	33	32	30	20	12
Temperature, Hourly Minimum (°C)	-16	-19	-24	-9	-12	-4	-1	2	9	-24	-8	-13
Temperature, Hourly Average (°C)	-1	-4	-4	1	5	10	15	20	19	13	5	0
Relative Humidity, Hourly Maximum (%)	64	(IM)	65	100	100	100	97	97	95	100	100	100
Relative Humidity, Hourly Minimum (%)	22	(IM)	23	7	8	1	5	7	8	0	13	18
Relative Humidity, Hourly Average (%)	42	(IM)	45	(1)	43	54	37	35	52	53	57	69

(IM) Instrument Malfunction.
(1) <75% data.

METEOROLOGICAL SUMMARY: TEMPERATURE AND RELATIVE HUMIDITY

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)	9											
Temperature, Hourly Minimum (°C)	-21											
Temperature, Hourly Average (°C)	-4											
Relative Humidity, Hourly Maximum (%)	100											
Relative Humidity, Hourly Minimum (%)	0											
Relative Humidity, Hourly Average (%)	52											

TABLE 2.3.3.1-2

METEOROLOGICAL SUMMARY: TEMPERATURE AT STATION AD20

10 METER LEVEL

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
Temperature, Hourly Maximum (°C)			14	12	19	24	31	32				
Temperature, Hourly Minimum (°C)			-36	-12	-18	-8	-3	1				
Temperature, Hourly Average (°C)			-7	1	3	9	14	19				

* Station initiated February 3, 1982, replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

** Station discontinued 7/26/82.

TABLE 2.3.3.1-3

Station AB23
Direct Solar Radiation

Month/ Year	Total Langleys For Month	Average Daylight Hr/Day	Daylight Hours/ Month	Uptime Daylight Hr/Mo.*	Daily Total/Day of The Month	
					Monthly Highest	Monthly Lowest
12/81	6245	10	310	310	482/3	14/21
01/82	5743	10	310	300	320/28	70/22
02/82	7556	11	308	297	385/26	116/16
03/82	8961	11	372	308	510/24	130/26
04/82	12017	12	390	334	635/21	215/7
05/82	11827	14	434	337	673/31	183/4
06/82	14998	15	450	422	695/7	272/22
07/82	16688	15	465	446	703/10	252/28
08/82	13313	14	434	417	702/1	235/13
09/82	9931	13	390	388	562/1	103/11
10/82	9485	12	372	372	453/6	95/27
11/82	6506	10	300	296	320/3	100/22 & 29

* Channel "uptime" is given for reference only.

TABLE 2.3.3.1-3 (Contd)

Station AB23
Direct Solar Radiation

Month/ Year	Total Langleys For Month	Average Day-light Hr/Day	Daylight Hours/ Month	Uptime Day-light Hr/Mo.*	Daily Total/Day of The Month	
					Monthly Highest	Monthly Lowest
12/82	1503	10	310	81	259/4	100/9

* Channel "uptime" is given for reference only.

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-4

STATION: WR01 Minimum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	11	9	18	32		38			40	25		
2	-13	2	27	18		33			32	22		
3	-10	5	24	16		42			33	22		
4	0	-22	8	29		31			39	24		
5	14	-34	14	7		33			36	26		
6	11	-33	8			26			40	22		
7	-31	-30	17	20		22			41	19		
8	-30	-19	19	2		28			43	22		
9	-21	-19	17	10		25			40	26		
10	-9	-12	19	9		26			46	17		
11	-4	-1	25	24		33			45	13		
12	0	-7	27	34		35			38	18		
13	-4	-4	12	22		35			36	24		
14	-4	26	16	21		34			31	18		
15	-2	20	25	19		37			34	19		
16	3	19	22	11		34			33	24		
17	18	17	16	5		40			41	22		
18	12	14	19	14		48			32	22		
19	5	10	18	9		32			38	11		
20	4	10	11	3		35			35	11		
21	6	15	8	1		41			34	14		
22	6	19	6	8		43			36	16		
23	-5	26	8	21		44			41	18		
24	0	12	10	21		39			32	25		
25	6	15	11	22		41			34	37		
26	8	12	24	25		35			49	29		
27	19	17	30	29		39			44	13		
28	5	19	23	19		41			30	18		
29	6		30	29		36			31	14		
30	-1		12	16		45			33	25		
31	2		12							32		
AVG.	.1	3.1	17.3	17.1		35.7			37.2	20.9		

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-5

STATION: WR01 Maximum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	39	36	50	50		68			93			
2	44	24	49	53		72			83			
3	21	28	47	37		70			84			
4	19	22	35	51		69			88			
5	24	-1	34	52		77			84			
6	32	11	33			75						
7	14	18	36	48		67						
8	12	30	42	30		75						
9	16	23	48	37		70						
10	23	28	50	41		70						
11	31	30	54	55		75						
12	32	29	49	59		78						
13	24	39	43	48		80						
14	26	44	50	60		79						
15	34	42	49	60		74						
16	33	45	45	56		70						
17	36	42	44	45		79						
18	43	44	42	58		79						
19	36	38	54	56		73						
20	37	46	36	34		78						
21	28	49	35	35		80						
22	33	55	36	49		76						
23	19	54	41	60		78						
24	29	50	44	53		81						
25	45	41	47	62		82						
26	46	44	53	61		78						
27	52	46	44	56		78						
28	37	46	47	55		87						
29	41		53	64		90						
30	34		36	53		87						
31	34		34									
AVG.	31.4	35.8	43.9	51.0		76.5						

DATA NOT AVAILABLE FOR REMAINDER OF MONTH

DATA NOT AVAILABLE

CLIMATOLOGICAL DATA SUMMARY TABLE 2.3.3.1-6

STATION: WR02 Minimum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19	16	25	31		41			47	32		
2	1	4	35	21		33			43	27		
3	7	9	29	21		40			44	28		
4	8	-8	16	27		36			40	31		
5	21	-19	16	5		32			50	35		
6	9	-23	14	21		27			44	29		
7	-22	-12	26	24		27			48	23		
8	-14	2	22	7		37			48	27		
9	-3	-11	24	15		30			44	23		
10	3	11	33	16		35			48	19		
11	6	8	35	36		39			46	17		
12	9	1	27	36		45			41	26		
13	6	5	20	30		44			40	32		
14	4	20	25	29		44			37	29		
15	9	25	31	30		40			37	25		
16	14	26	26	20		39			40	32		
17	29	28	28	16		45			45	29		
18	30	16	22	24		50			39	34		
19	21	15	24	15		38			41	17		
20	18	18	20	16		40			43	17		
21	6	23	14	12		42			41	22		
22	12	22	14	18		45			40	26		
23	3	31	16	27		45			48	27		
24	23	18	19	29		45			40	35		
25	15	25	17	32		45			47	45		
26	20	17	31	33		40			52	37		
27	24	24	33	38		46			45	31		
28	10	26	31	28		47			35	21		
29	21		26	38		47			35	22		
30	5		16	27		56			36	32		
31	13		15							38		
AVG.	10.5	11.3	23.5	24.1		40.7			42.8	28.0		

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.1-7

STATION: WR02 Maximum Temperature (DEGF) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	44	35	53	58		70			84	55		
2	41	28	51	52		65			85	60		
3	25	27	42	56		69			87	67		
4	25	30	43	55		70			81	70		
5	40	25	36	45		72			74	66		
6	36	22	39	52		66			78	56		
7	15	36	42	50		74			72	68		
8	26	33	50	42		72			70	58		
9	30	32	55	45		68			78	56		
10	40	35	55	54		76			74	58		
11	40	36	55	64		77			68	49		
12	39	38	47	59		80			62	56		
13	32	45	57	65		76			49	50		
14	35	45	56	65		77			50	63		
15	38	47	50	65		70			67	68		
16	44	46	48	50		71			74	65		
17	47	45	47	62		79			72	66		
18	42	46	57	60		72			73	65		
19	43	50	53	45		77			70	60		
20	40	51	38	41		80			71	58		
21	37	53	41	48		80			77	60		
22	30	57	44	65		75			78	61		
23	29	51	49	61		79			80	67		
24	46	47	50	65		81			77	72		
25	43	50	57	64		80			63	61		
26	57	51	54	60		76			71	57		
27	48	49	50	56		85			69	49		
28	47	55	56	60		90			51	41		
29	36		54	69		87			55	43		
30	35		37	69		85			60	52		
31	38		49							49		
AVG.	37.7	41.6	48.9	56.7		76.0			70.7	58.9		

2.3.3.2 Precipitation

Precipitation was monitored at three stations during this reporting period. Stations AB23 and AD28 (leachate pile) were monitored for the entire period. Station AD20 was discontinued on July 26, 1982.

USGS precipitation data are reported for Stations WR01 (Little Hills) and WR02 (Meeker 2). Data for Stations WR03 - WR08, WU15, WU22, WU50, and WU58 are not available at report time.

Following is a list of tables included in this section:

Figure 2.3.3.1-1 shows locations of monitoring stations presented in this section.

TABLE 2.3.3.2-1

SUMMARY OF PRECIPITATION: STATION AB23

(Measured with Weighing Rain Gauge)

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.25	.30	.28	.13	.28	.63	.58	.76	.99	.84	.46	.23
Date	12/27/81	1/20/82	2/16/82	(1)	4/27/82	5/1/82	6/14/82	7/28/82	8/12/82	9/9/82	10/26/82	11/10/82
Time	0300	2400	1800		1000	1300	0500	1400	1500	1300	2300	2400
24-Hour Maximum(cm)	.74	.76	.46*	.33	.63	2.77	.58	1.42	1.93	1.35	.91	.79
Date	12/21/81	1/1/82	2/4/82	3/3/82	4/7/82	5/12/82	6/14/82	7/28/82	8/12/82	9/18/82	10/27/82	11/10/82
Total (cm)	3.00	2.24	1.74*	1.43*	2.06	4.66	1.45*	2.61*	6.38	7.47	1.81*	3.25

* Data missing for the month; this total may be incomplete.

(1) Maximum 1-Hour for March occurred 2 times: 3/15/82 @ 0400; 3/16/82 @ 2300.

1,18 ,88 ,69* ,56* ,81 1,83 ,57* 1,03* 2,51 2,94 ,71* 1,28

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.25											
Date	12/9/82											
Time	2100											
24-Hour Maximum(cm)	.53											
Date	12/23/82											
Total (cm)	2.49											

0,94

TABLE 2.3.3.2-2

SUMMARY OF PRECIPITATION: STATION AD20*

(Measured with Weighing Rain Gauge)

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)			(1)	.13	.25	.53	.18	.58				
Date				3/17/82	(3)	5/12/82	(4)	7/25/82				
Time				0100		1500		1400				
24-Hour Maximum(cm)			(1)	.30	.58	3.56	.38	.66				
Date				3/17/82	4/23/82	5/12/82	6/21/82	7/8/82				
Total (cm)			(1)	1.14(2)	1.32(2)	5.61	1.02	1.96				

* Station initiated February 3, 1982 replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

(1) <75% data.

(2) Data missing for the month; this total may be incomplete.

(3) 1-hour maximum occurred 2 times: 4/2/82 @ 0500 and 4/23/82 @ 1100.

(4) 1-hour maximum occurred 2 times: 6/14/82 @ 2000 and 6/21/82 @ 1600.

** Station discontinued 7/26/82. Total precipitation value reported includes only data through 7/26/82.

TABLE 2.3.3.2-3

SUMMARY OF PRECIPITATION: STATION AD28

(Measured with Weighing Rain Gauge)

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.23	.15	.25	.25	.18	.51	.84	.51	.76	.63	.38	.23
Date	(1)	1/9/82	2/17/82	3/17/82	(2)	5/1/82	6/14/82	7/28/82	8/12/82	9/9/82	10/26/82	11/10/82
Time		1600	1000	1100		1400	1600	1400	1400	1100	2300	2400
24-Hour Maximum(cm)	.46	.25	.38	.41*	.56	2.06	.84	.86	1.93	1.70	.79	.99
Date	12/29/81	1/9/82	2/2/82	3/17/82	4/23/82	5/12/82	6/14/82	7/28/82	8/12/82	9/27/82	10/27/82	11/10/82
Total (cm)	2.18	.89	.93*	.57*	1.8*	5.15*	1.63	3.12	5.04	7.77	3.99	3.56

* Data missing for the month; this total may be incomplete.
(1) Maximum 1-Hour for December occurred 2 times: 12/1/81 @ 1500; 12/29/81 @ 1600.
(2) Maximum 1-Hour for April occurred 2 times: 4/7/82 @ 1800; 4/23/82 @ 1000.

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1-Hour Maximum (cm)	.23											
Date	(1)											
Time												
24-Hour Maximum(cm)	.58											
Date	12/23/82											
Total (cm)	1.79(2)											

(1) Maximum 1-Hour value occurred 2 times: 12/9/82 @ 2100, and 12/23/82 @ 2000.
(2) Total represents 86% of month. Instrument was not functioning for 14% of the total hours in month.

CLIMATOLOGICAL DATA SUMMARY TABLE 2.3.3.2-4

STATION: WR01 Precipitation (Inches) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	.08	.15								.09		
2	.16	.04	.05	.14								
3	.08		.09									
4		.03	.09									
5			.04	.03								
6									.42			
7				.11								
8				.04						.70		
9		.02							.05			
10									T			
11									.68			
12	.10		.02	.02					.44			
13	.06								.56	.15		
14									.32			
15			.02			.07			.04			
16			.06									
17		.24	.23									
18												
19			.02									
20	T											
21												
22	.13					.24						
23						.02			.02			
24				.04								
25										T		
26						.06			.11	.28		
27	.03		.16	.01					.32	.16		
28			.02	.04					.62			
29			T						.20			
30			.08						.03			
31										.26		
TOTAL	.76	.48	.88	.43		.39			3.81	1.64*		

*Partial Data

CLIMATOLOGICAL DATA SUMMARY

TABLE 2.3.3.2-5

STATION: WR02 Precipitation (Inches) YEAR: 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	.07	.10								T		
2	.13		.02	.10								
3	.10	T	.02									
4			.10						.12			
5	.03			.05					.65	.20		
6	.04		T						.02	.08		
7				.07					T			
8		T							.04	.19		
9										.07		
10												
11									.58			
12	.14		.02	.20					.16			
13	.08								.42	.05		
14									.17			
15			.07						.09			
16		.19	T									
17			.20			T						
18												
19			T							T		
20	T								.02			
21												
22	.10								T			
23				.10					.12			
24				T								
25									T	T		
26						.03			.13	.02		
27	.10		.16	.10					.33	.60		
28									.20			
29			.02	T					.09			
30			T						.26			
31										.36		
TOTAL	.79	.29	.61	.62		.03			3.40	1.57		

Wind Fields

2.3.3.3 Wind Fields

This section presents the wind field data collected at the meteorological tower Station AA23 and Station AD20. Data consist of wind speed, wind direction, vertical variations in horizontal wind speed and wind direction, and stability class. Wind flow patterns and stability class provide information for diffusion modeling and pollutant transport and concentration.

Following is a list of tables and figures included in this section:

* Additional tables on atmospheric stability are presented in a following section (2.3.5).

TABLE 2.3.3.3-1

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	11 221	13 188*	8 211*	11 179	10 221	9 174*	10 209*	8 205*	7 196*	8 186*	9 199*	10 189
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	3 194	4 214	2 212	3 222	3 232	3 264	3 245	2 216	2 176	2 191	2 222	2 186

* Maximum wind speed occurred >1 time. Associated Direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	10 216											
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	3 225											

TABLE 2.3.3.3-2

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

30 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	15 213.5*	17 179*	12 213	15 180	15 225	12 175*	14 220	11 203	10 177	11 167	13 200	14 193
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	4 192	5 207	3 208	4 226	4 239	4 279	4 253	2 225	3 181	3 195	3 223	3 195

* Maximum wind speed occurred >1 time. Associated Direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

30 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	14 219											
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	3 227											

TABLE 2.3.3.3-3

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

60 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	17 223*	18 191*	13 222	17 181	17 225	13 180*	15 209*	12 193*	12 178*	12 174*	14 201*	17 194
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	4 210	6 218	3 222	5 234	5 246	4 291	4 254	4 223	3 190	4 201	4 230	4 206

* Maximum wind speed occurred >1 time. Associated direction was calculated as a vector mean.

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

60 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)	16 218											
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)	4 231											

TABLE 2.3.3.3-4

METEOROLOGICAL SUMMARY: WIND SPEED & DIRECTION

STATION AD20*

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July**	Aug.	Sept.	Oct.	Nov.
Wind Speed, Hourly Maximum(MPS) & Associated Direction (DEG)			7 258	10 259.5(1)	10 282(1)	8 135.5(1)	9 275	8 108				
Wind Speed, Hourly Average(MPS) & Wind Direction, Hourly Average(DEG)			3 148	3 157	3 172	3 178	3 168	3 154				

* Station initiated February 3, 1982, replacing air quality trailer AB20. Refer to Environmental Monitoring Report, July 15, 1982, Station AB20 summary tables for December 1981 through January 1982 values.

(1) Maximum wind speed occurred >1 time. Associated direction was calculated as a vector mean.

** Station discontinued 7/26/82.

TABLE 2.3.3.3-5

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

10 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.8	2.8	1.2	2.3	1.5	1.0	1.2	1.2	0.8	1.4	0.9	1.5
Wind Direction (DEG)	208	212	216	211	232	249	226	210	181	185	218	187

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

10 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.2											
Wind Direction (DEG)	213											

TABLE 2.3.3.3-6

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

30 METER LEVEL
STATION AA23

(1981-1982) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	2.7	3.8	1.6	3.2	2.1	1.4	1.7	1.7	1.2	2.0	1.2	2.2
Wind Direction (DEG)	203	206	209	211	235	252	225	209	181	185	216	191

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

30 METER LEVEL
STATION AA23

(1982-1983) By Month

Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	1.8											
Wind Direction (DEG)	211											

TABLE 2.3.3.3-7

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

60 METER LEVEL
STATION AA23

(1981-1982) By Month

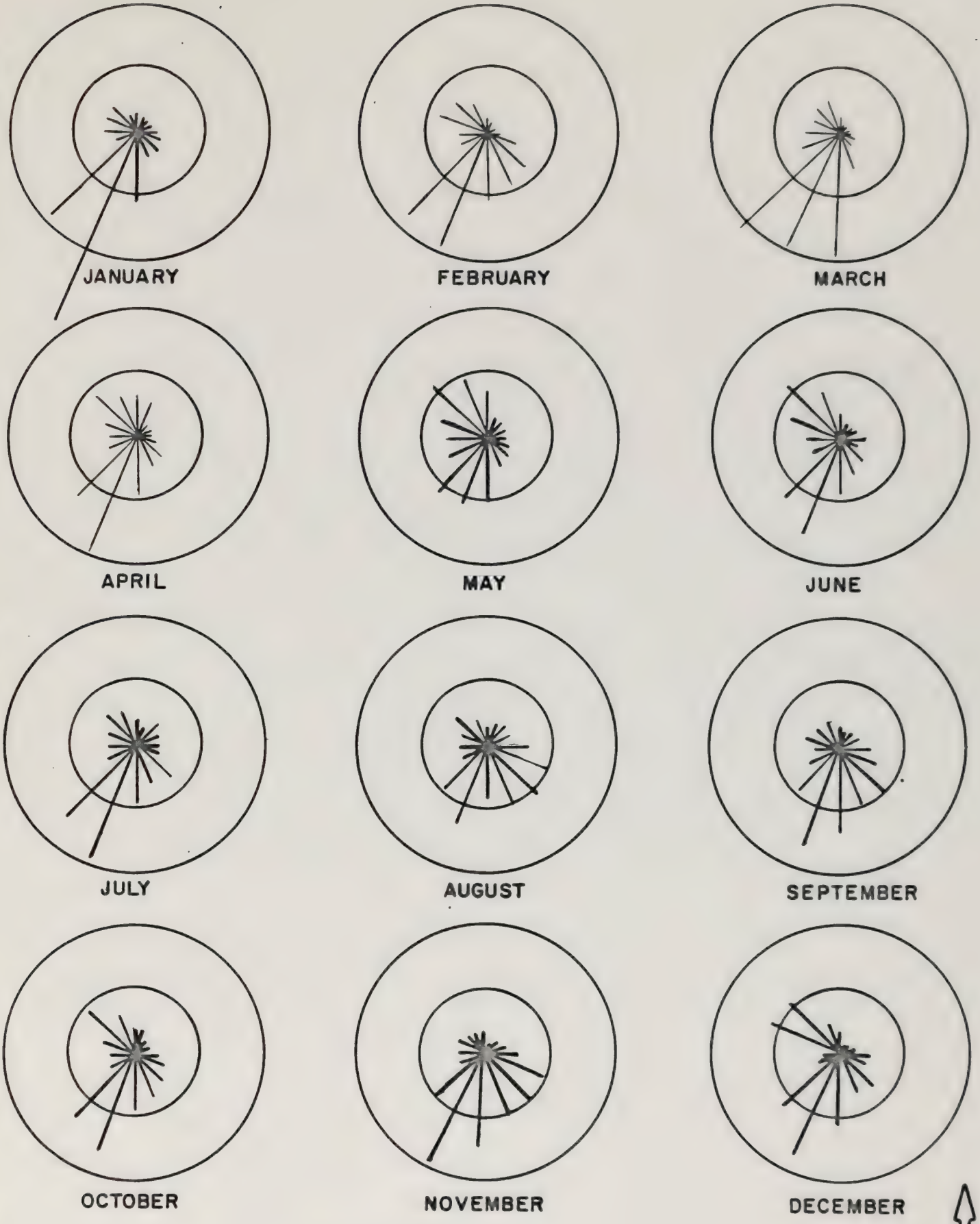
Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	3.3	4.5	2.0	3.8	2.5	1.5	1.9	2.0	1.6	2.4	1.4	2.9
Wind Direction (DEG)	217	218	221	215	235	257	227	211	188	189	220	197

METEOROLOGICAL SUMMARY: VECTOR MONTHLY AVERAGES FOR WINDS

60 METER LEVEL
STATION AA23

(1982-1983) By Month

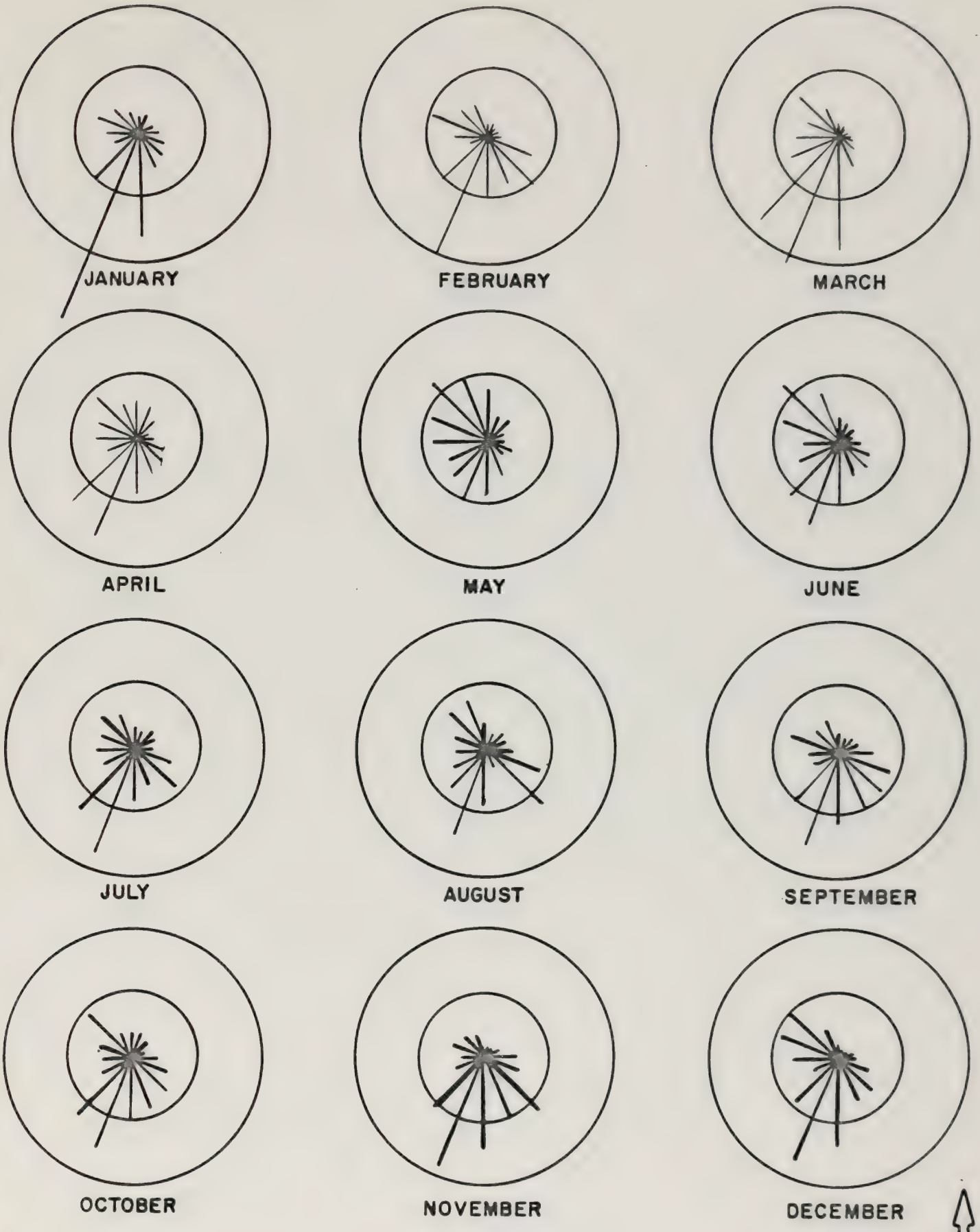
Item	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Wind Speed (MPS)	2.3											
Wind Direction (DEG)	216											



1982

STATION AA 23 @ 10M ELEVATION WIND ROSES

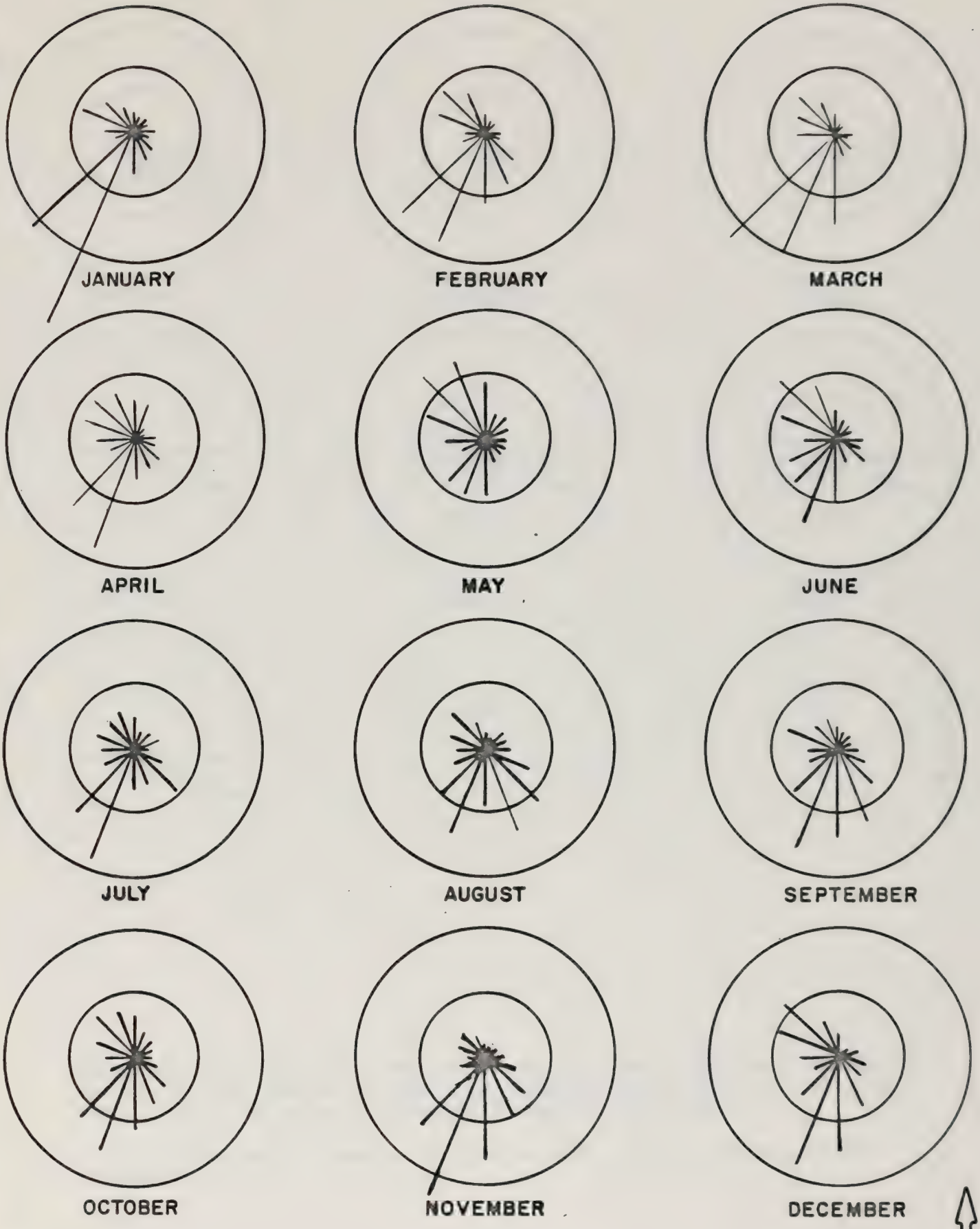
FIGURE 2.3.3.3-1



1982

STATION AA23 @ 30M ELEVATION WIND ROSES II- 73 -

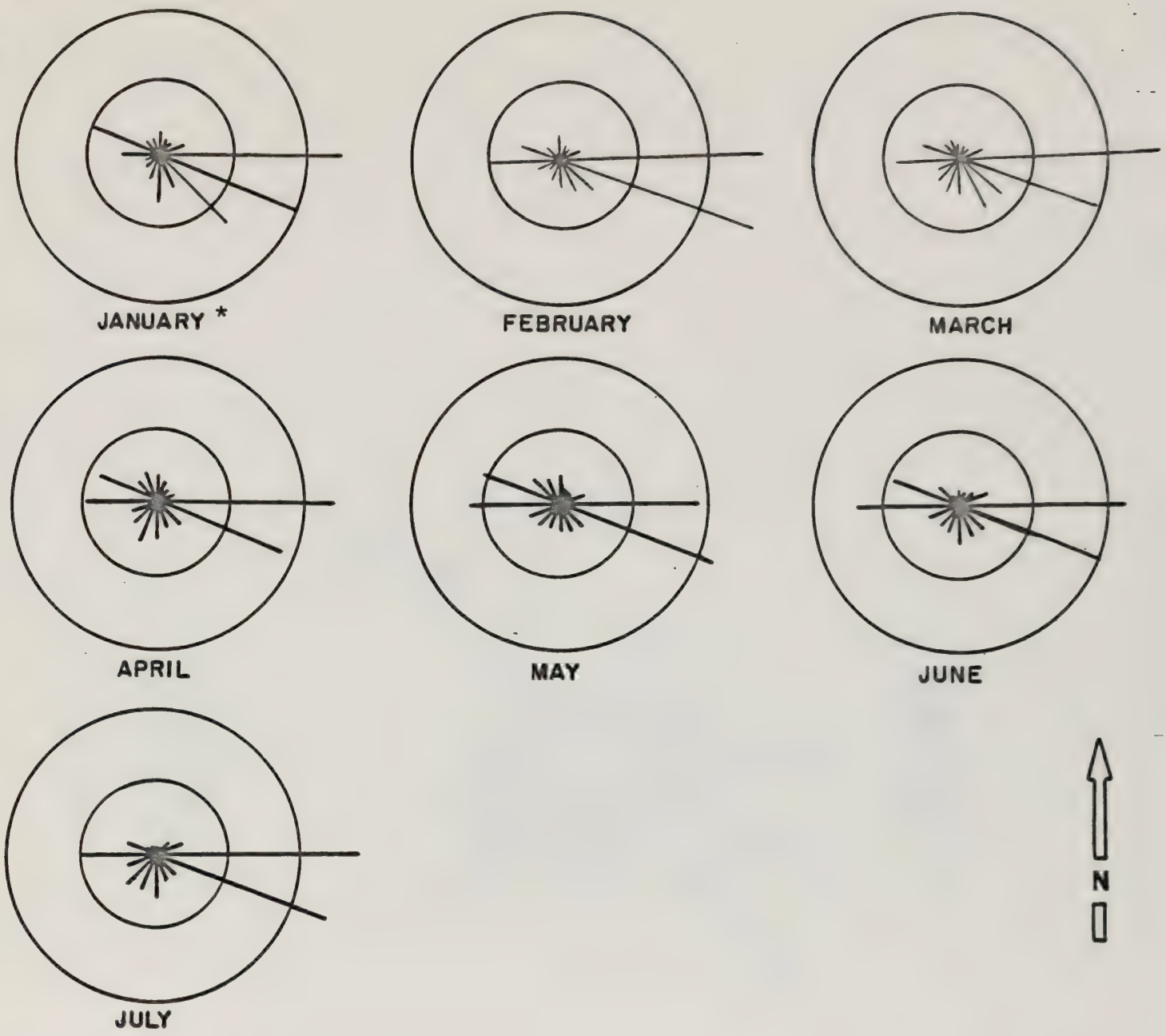
FIGURE 2.3.3.3-2



1982

STATION AA23 @ 60M ELEVATION WIND ROSES

FIGURE 2.3.3.3-3



Meteorological station AD20 was initiated in February 1982, replacing Air Quality trailer AB20 at the same site. Meteorological data were collected until 7/26/82, at which time the station was discontinued.

* Data for January is reported as station AB20. It is included here for easy reference.

1982

STATION AB20 @ 10M ELEVATION WIND ROSES

FIGURE 2.3.3.3-4

FIGURE 2.3.3.3-5

AB23 QUARTERLY WIND ROSE @ 10M
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1919

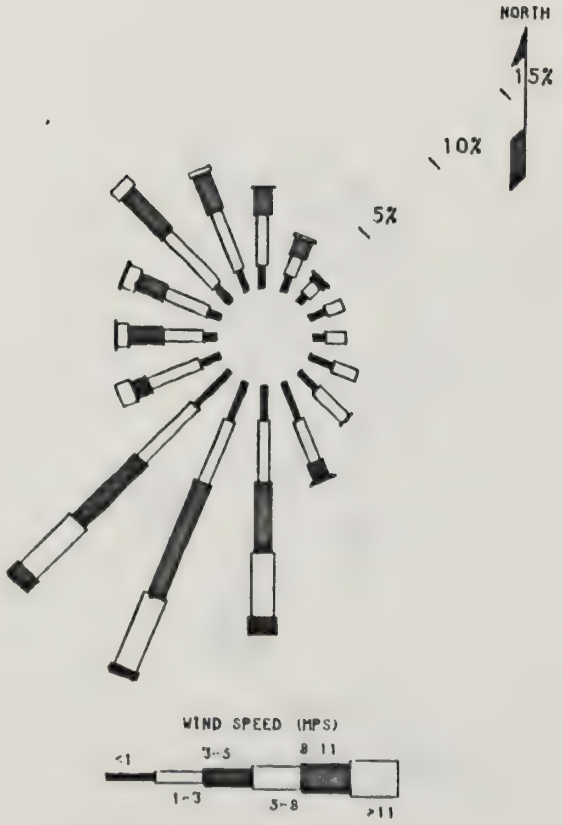


FIGURE 2.3.3.3-6

AB23 • 30M QUARTERLY WIND ROSE
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1932

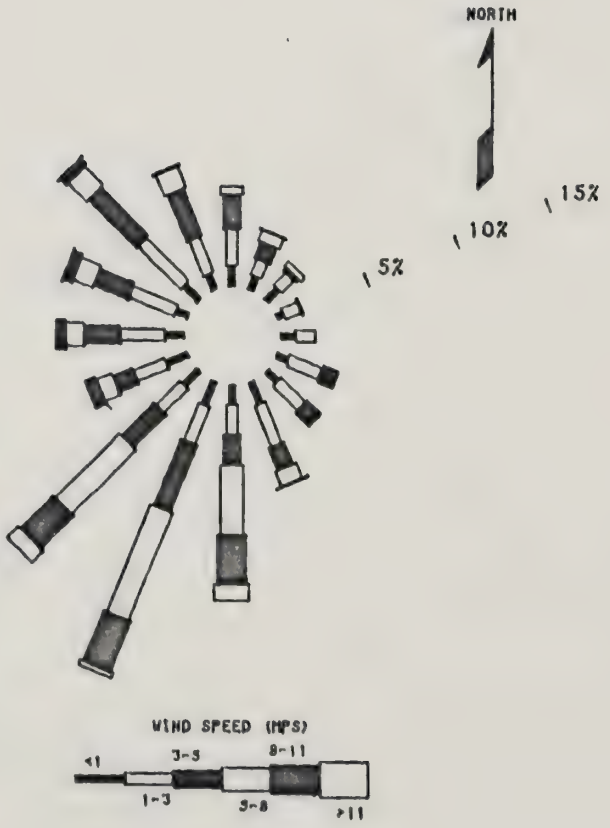


FIGURE 2.3.3.3-7

AB23 • 60M QUARTERLY WIND ROSE
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 1941

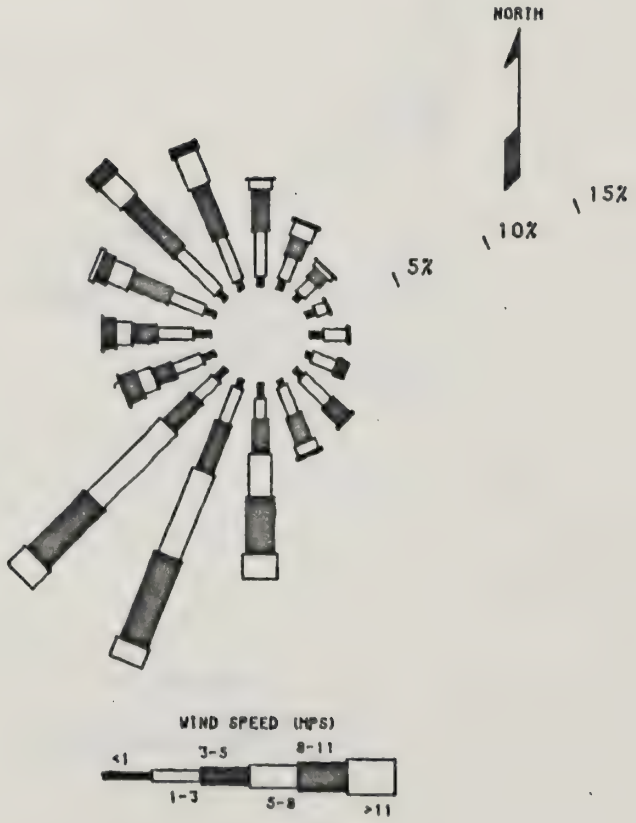
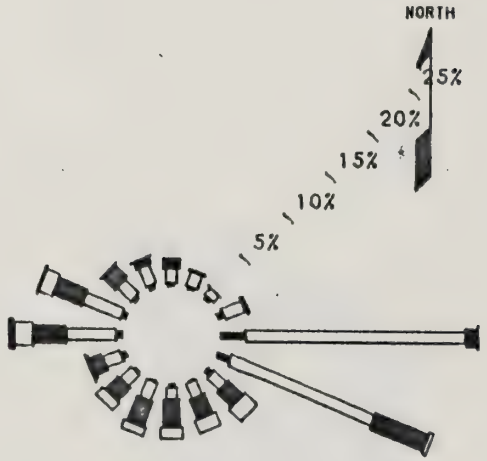


FIGURE 2.3.3.3-8

AD20 QUARTERLY WIND ROSE • 10M
MAR '82 - MAY '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2017



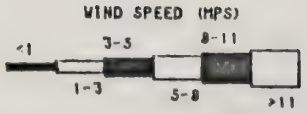


FIGURE 2.3.3.3-9

AB23 • 10M QUARTERLY WIND ROSE
JUN '82 - AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2089

FIGURE 2.3.3.3-10

AB23 • 30M QUARTERLY WIND ROSE
JUN '82 - AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2099

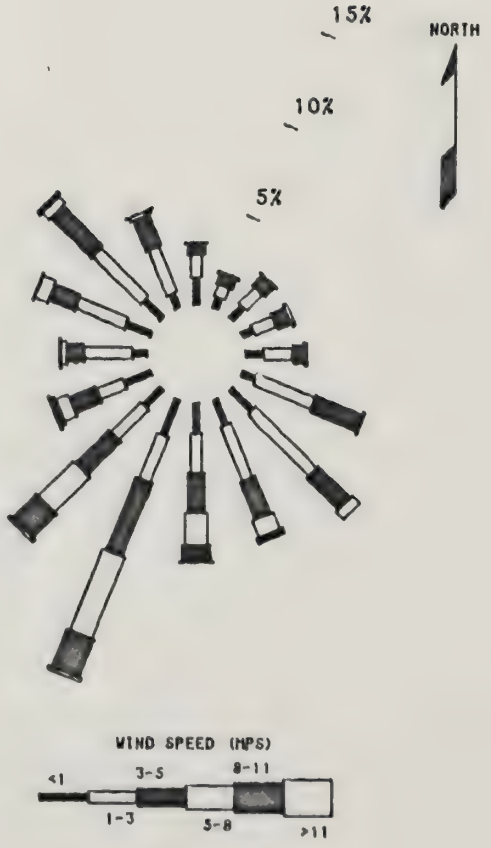


FIGURE 2.3.3.3-11

AB23 • 60M QUARTERLY WIND ROSE
JUN '82 - AUG '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2117

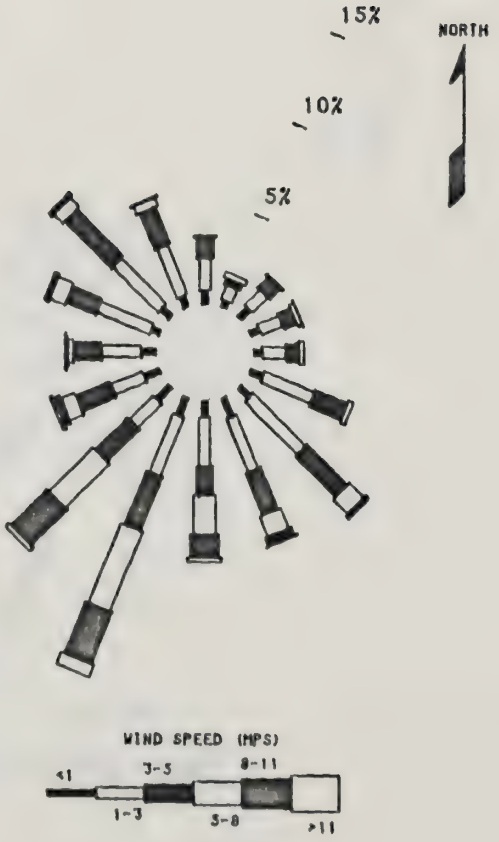


FIGURE 2.3.3.3-12

AB23 QUARTERLY WIND ROSE @ 10M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2097

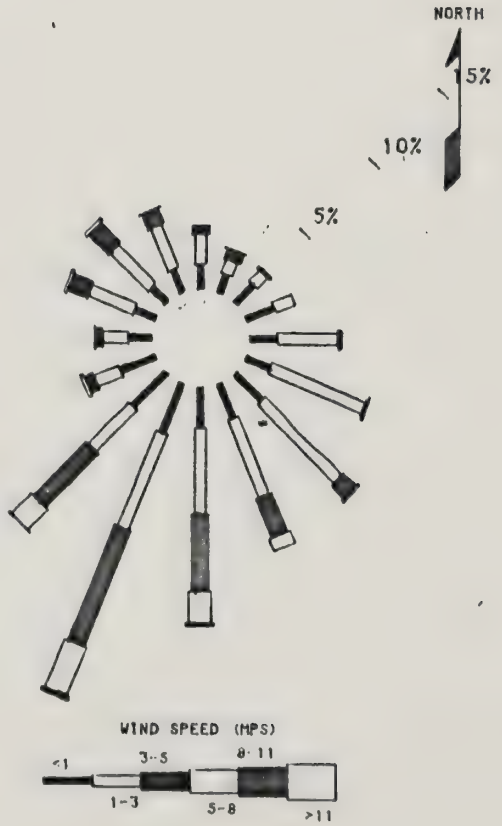


FIGURE 2.3.3.3-13

AB23 QUARTERLY WIND ROSE • 30M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2084

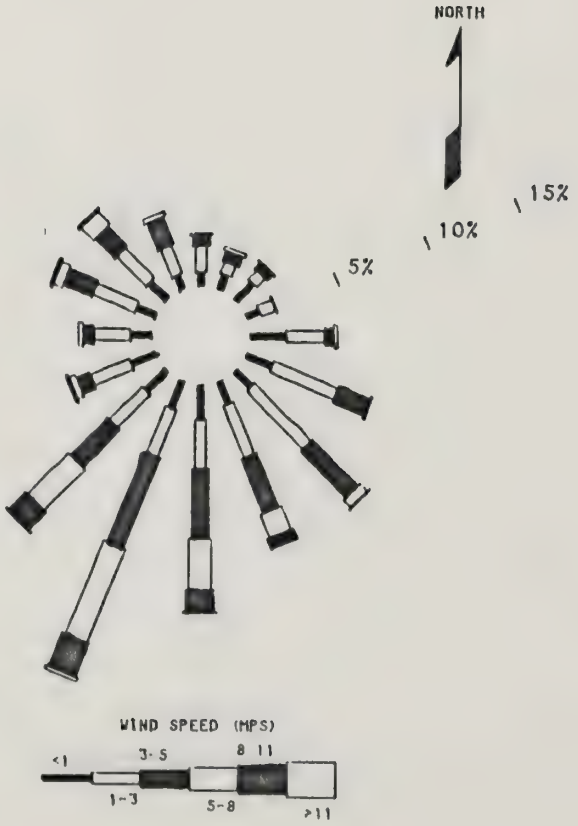


FIGURE 2.3.3.3-14

AB23 QUARTERLY WIND ROSE • 60M
SEP '82 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 2135

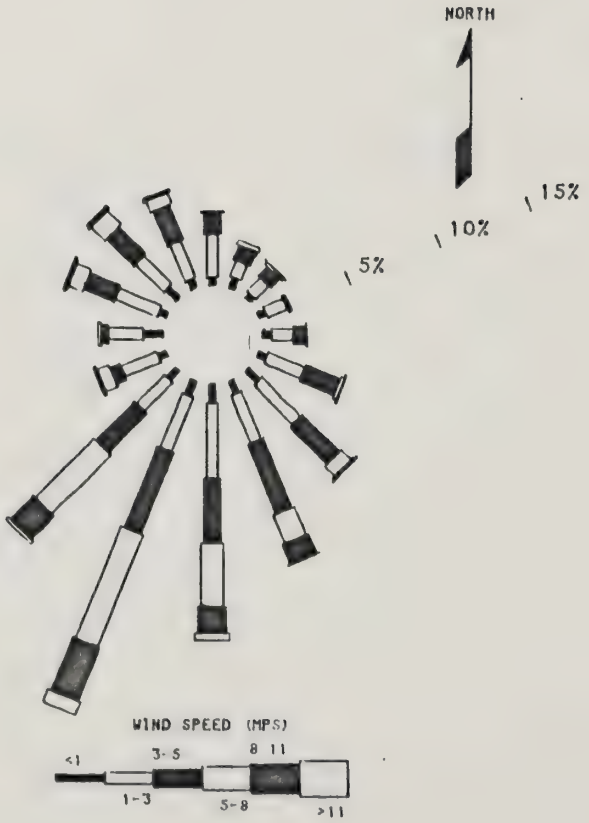


FIGURE 2.3.3.3-15

AB23 ANNUAL WIND ROSE @ 10M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8123

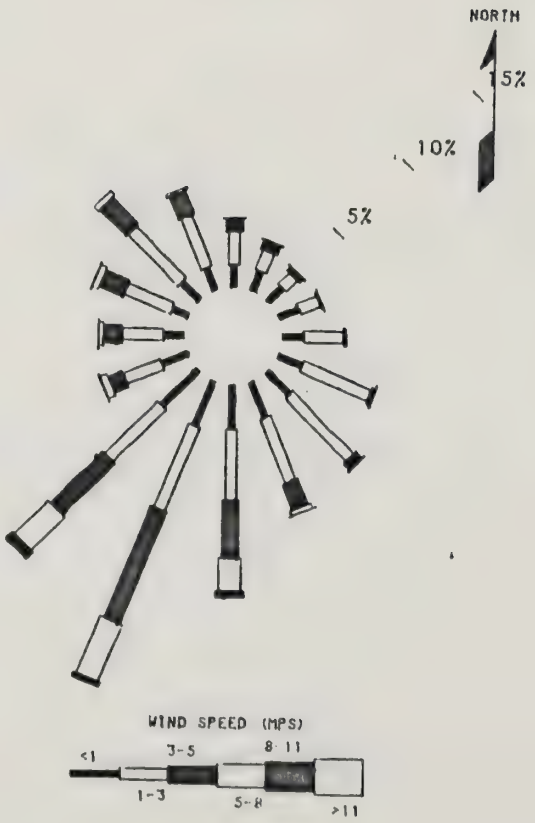


FIGURE 2.3.3.3-16

AB23 ANNUAL WIND ROSE @ 30M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8144

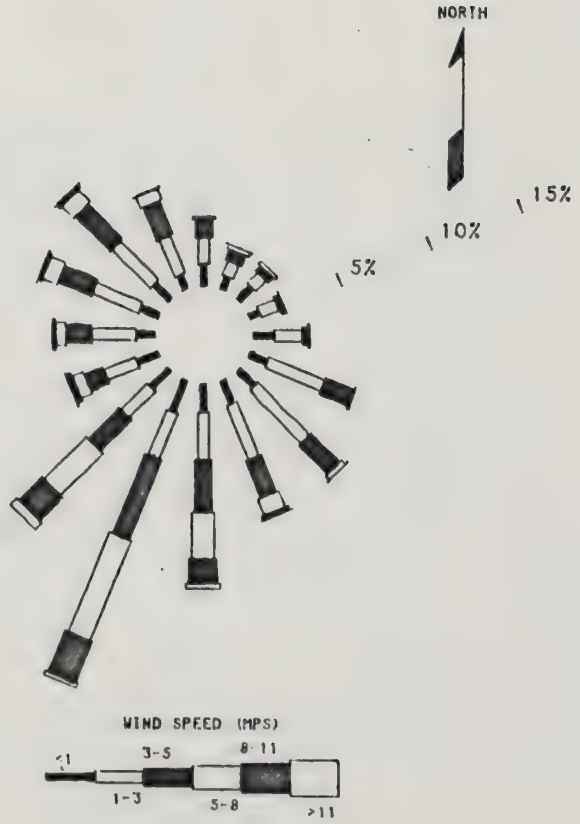


FIGURE 2.3.3.3.-17

AB23 ANNUAL WIND ROSE @ 60M
DEC '81 - NOV '82

TOTAL % OF CALMS DISTRIBUTED (0.0 %)
TOTAL NO. OF 1-HOUR SAMPLES - 8227

TABLE 2.3.3.3-8

AVERAGE HOURLY STABILITY CLASSES

SOURCE: Temperature difference between 60 meter and 10 meter levels on the met tower (Adjusted for wind speed)

Month	HOUR																							Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Dec.1981	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E	D
Jan.1982	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	D	D	E	E	E	E	E	D
Feb.	C	C	E	E	E	E	E	E	D	D	C	C	C	C	C	C	C	D	D	E	E	E	E	E	D
Mar.	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	C	C	D	D	E	E	E	E	E	D
April	E	E	E	E	E	E	E	E	D	C	C	D	C	C	C	C	C	C	D	D	D	E	E	E	D
May	E	E	E	E	E	E	E	D	D	D	C	C	C	C	C	C	C	D	D	D	E	E	E	E	D
June	E	E	E	E	E	E	E	D	D	D	C	C	C	C	C	C	C	C	D	D	E	E	E	E	D
July	E	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	C	C	D	E	E	E	E	E	D
Aug.	E	E	E	E	E	E	E	E	D	D	C	C	D	C	C	C	C	D	D	E	E	E	E	E	D
Sept.	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
Oct.	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	C	D	D	E	E	E	E	E	E	D
Nov.	E	E	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E

Key: Unstable Class

D Neutral

Stable Class

TABLE 2.3.3.3-8 (Cont'd)

AVERAGE HOURLY STABILITY CLASSES

SOURCE: Temperature difference between 60 meter and 10 meter levels on the met tower (Adjusted for wind speed)

Month	HOUR																							Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Dec.1982	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D
Jan.1983																									
Feb.																									
Mar.																									
April																									
May																									
June																									
July																									
Aug.																									
Sept.																									
Oct.																									
Nov.																									

Key: Unstable Class

D Neutral

Stable Class

TABLE 2.3.3.3-9

METEOROLOGICAL SUMMARY: STABILITY CLASS FREQUENCIES (%)

Source: Temperature difference between 60 meter and 10 meter levels on the met tower (Adjusted for wind speed)

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1981	1982										Annual Mean
		Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
A	<-1.9	0.3	0.1	1.7	1.9	3.5	2.3	2.9	3.8	3.6	0.9	1.5	0.6	1.9
B	-1.9 to -1.7	1.8	4.7	10.0	16.4	11.1	11.1	8.7	10.8	12.0	4.8	5.3	5.5	8.5
C	-1.7 to -1.5	5.6	8.3	8.4	11.4	12.2	8.9	7.8	6.1	3.8	4.3	6.9	6.4	7.5
D	-1.5 to -0.5	47.7	50.6	37.5	38.7	33.4	31.0	31.2	28.5	22.1	36.6	32.8	32.2	35.2
E	-0.5 to 1.5	28.8	24.1	28.0	26.3	28.2	36.1	28.3	28.5	34.6	29.5	35.9	34.1	30.2
F	>1.5	15.8	12.2	14.4	5.3	11.6	10.6	21.1	22.3	23.9	23.9	17.6	21.2	16.7
	Total Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 2.3.3.3-9 (Cont'd)

METEOROLOGICAL SUMMARY: STABILITY CLASS FREQUENCIES (%)

Source: Temperature difference between 60 meter and 10 meter levels on the met tower (Adjusted for wind speed)

Pasquill-Gifford Stability Class	dT/dz Range[1] for this Stability Class (°C/100m)	1982	1983										Annual Mean
		Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
A	<-1.9	1.4												
B	-1.9 to -1.7	3.9												
C	-1.7 to -1.5	6.0												
D	-1.5 to -0.5	38.7												
E	-0.5 to 1.5	34.2												
F	>1.5	15.8												
	Total Percentage	100.0												

2.3.4 Visibility

The visibility monitoring program has been co-sponsored by the CB and Rio Blanco Shale Oil Projects. There are no state or federal requirements for visibility monitoring; however, the program is required under the Federal Oil Shale Lease Environmental Stipulations.

Figure 2.3.4-1 shows the four views used to monitor visual range.

Data collected during 1982 are presented on Table 2.3.4-1. Variations in daily mean visual range for Spring and Fall are shown on Figures 2.3.4-2 and 2.3.4-3, respectively.

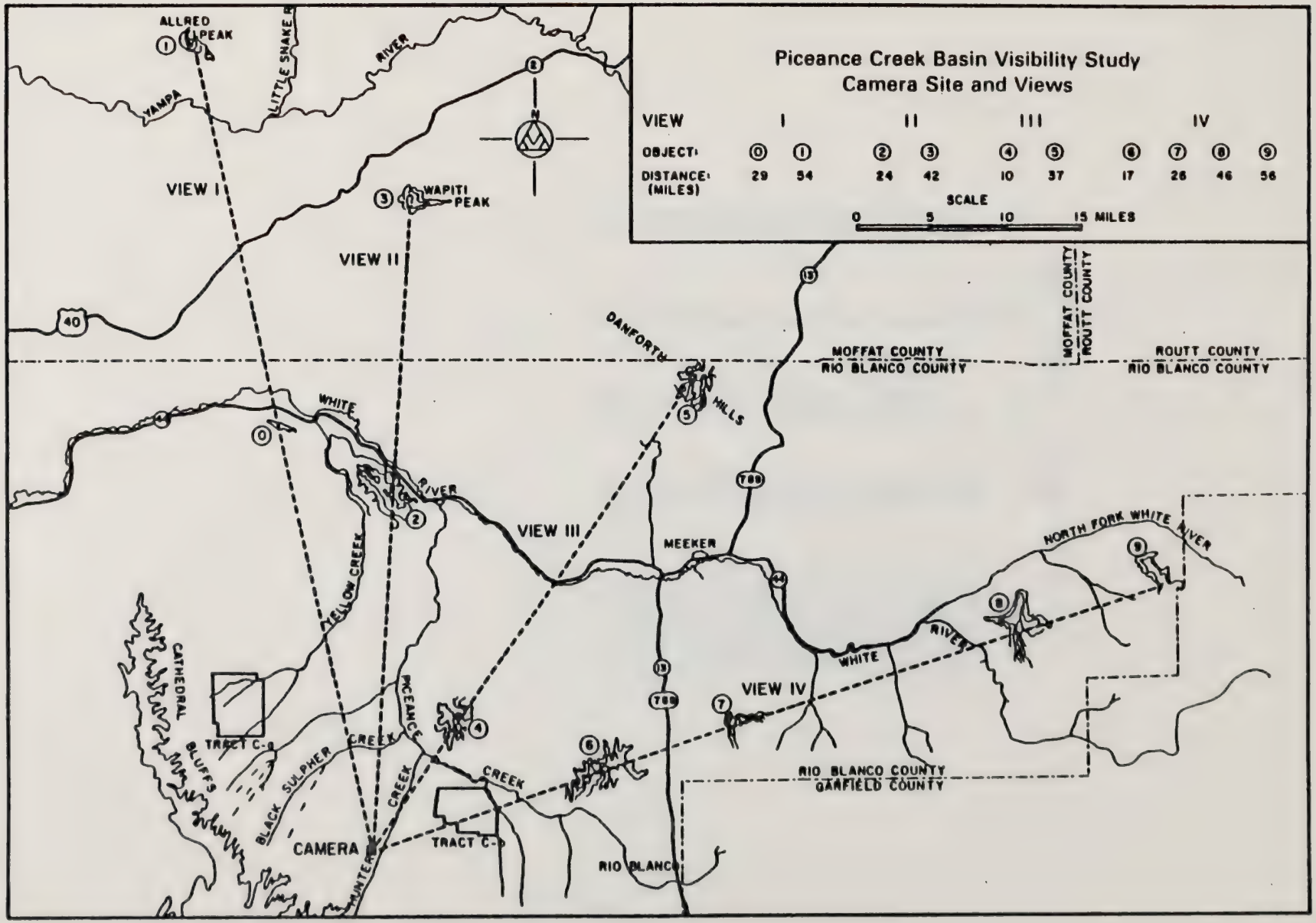

Piceance Creek Basin Visibility Study
Camera Site and Views
VIEW I II III IV
OBJECT 0 1 2 3 4 5 6 7 8 9
DISTANCE (MILES) 29 54 24 42 10 37 17 26 46 56
SCALE
0 5 10 15 MILES
ALLRED PEAK
LITTLE SNAKE R
YAMPA
RIVER
WAPITI PEAK
VIEW I
VIEW II
VIEW III
VIEW IV
40
DANFORTH HILLS
MOFFAT COUNTY
ROUTT COUNTY
MOFFAT COUNTY
RIO BLANCO COUNTY
ROUTT COUNTY
RIO BLANCO COUNTY
WHITE RIVER
YELLOW CREEK
MEEKER
NORTH FORK WHITE RIVER
WHITE RIVER
CATHEDRAL BLUFFS
TRACT C-a
BLACK SULPHER CREEK
PICEANCE CREEK
WINTER CREEK
CAMERA
TRACT C-b
RIO BLANCO
RIO BLANCO COUNTY
GARFIELD COUNTY

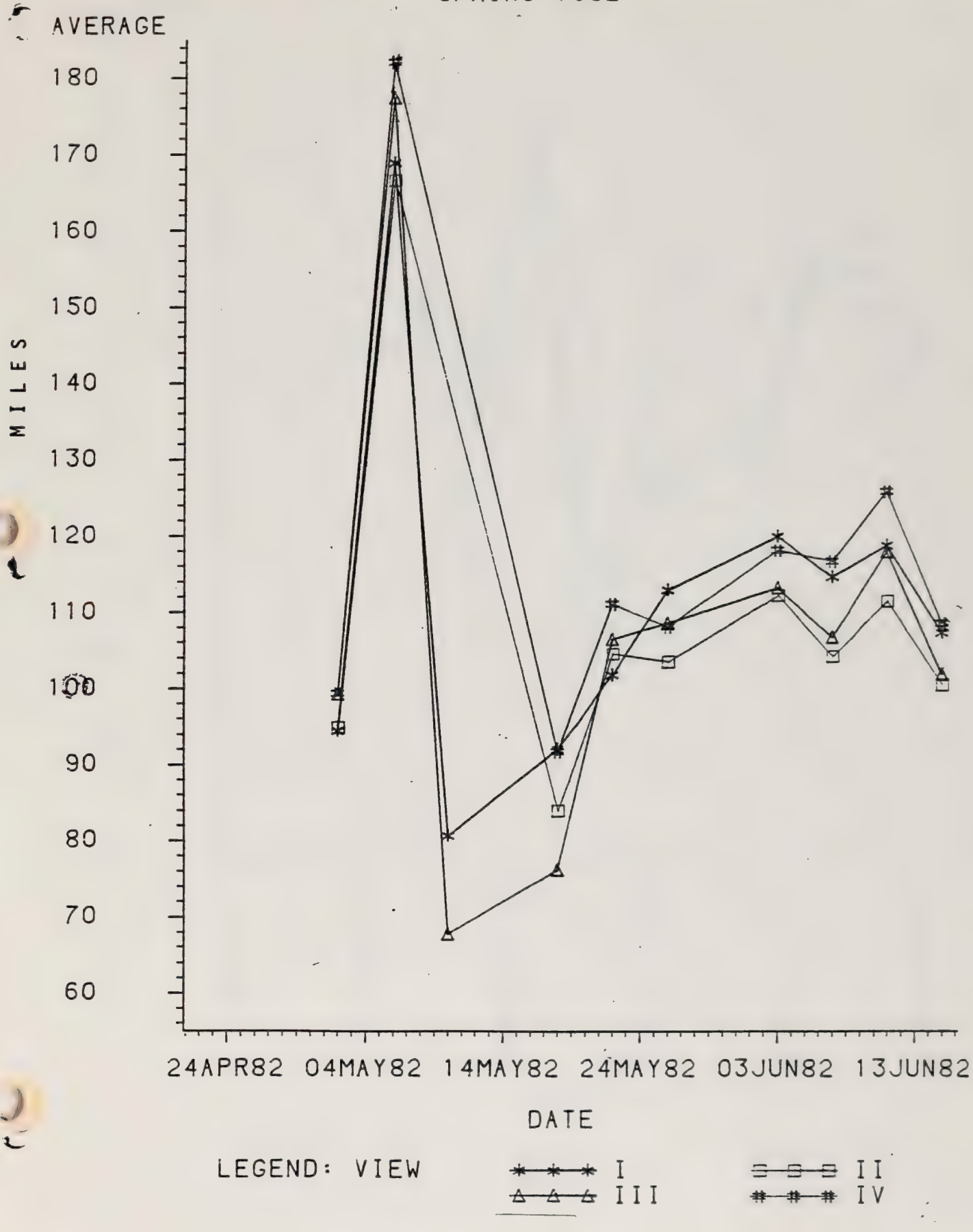
Figure 2.3.4-1

MEAN VISUAL RANGE BY DATE

YR	MO	DY	N	MILE
82	5	3	28	96.961
82	5	7	27	173.924
82	5	11	14	74.521
82	5	19	25	85.499
82	5	23	28	105.826
82	5	27	28	108.149
82	6	4	28	115.729
82	6	8	27	110.263
82	6	12	28	118.306
82	6	16	28	104.362
82	9	4	28	81.265
82	9	16	28	76.477
82	9	20	20	70.375
82	9	24	28	85.166
82	9	28	20	60.375
82	10	2	25	69.435
82	10	6	18	77.305
82	10	10	26	70.268
82	10	14	27	79.233
82	10	18	27	78.233
82	10	22	28	73.402

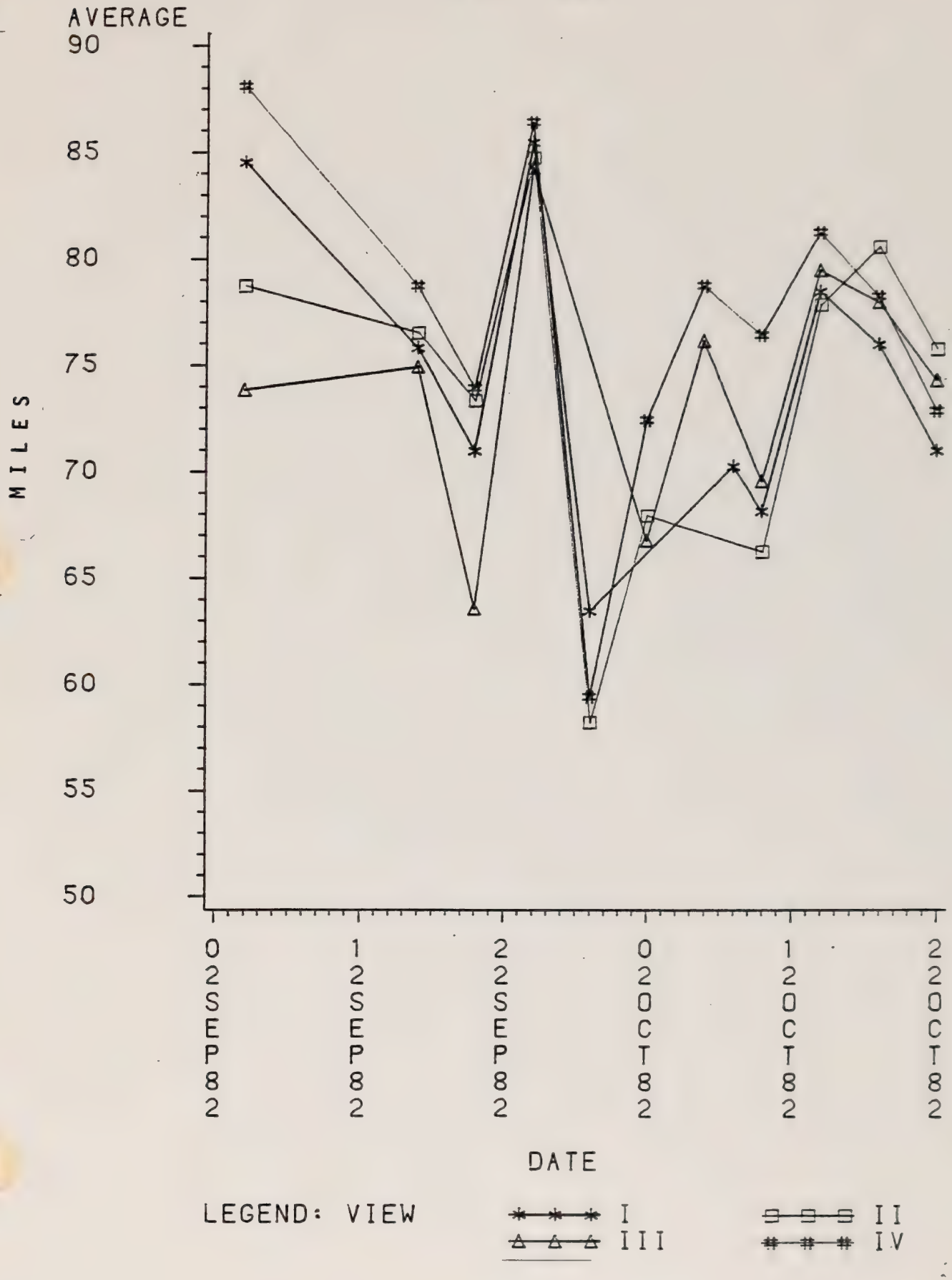
VARIATION IN DAILY MEAN VISUAL RANGE BY VIEW

SPRING 1982



VARIATION IN DAILY MEAN VISUAL RANGE BY VIEW

FALL 1982



2.3.5 Atmospheric Diffusion Studies

New atmospheric diffusion modeling studies were completed in the Fall of 1982 to support an amendment to the CB Prevention of Significant Deterioration (PSD) permit application to the EPA Region VIII, submitted in December 1982. A copy of this application is on file with the Deputy Minerals Manager - Oil Shale.

The tables of wind persistence utilized are presented here as Tables 2.3.5-1 and 2.3.5-2 for PSD Classes II and I respectively. The following procedures were used to obtain these summary tables:

1) For each of the 5 most recent years (1977 through 1981) ranked tables of daily hours of wind persistence by atmospheric stability class by wind sector were generated.

2) Only >6 hours of persistence were retained for summary, consistent with the EPA Valley model. This model assumes a 6-hour wind persistence for 24-hour averaging times.

3) Generally from a modeling point of view ambient pollutant concentrations are highest for cases where the product of the wind speed multiplied by wind direction standard deviation is lowest. Thus low values of this product were given priority; they are shown in the tables.

4) For PSD Class II stable cases, historically the worst cases correspond to SSW winds which cause plume impaction on close-in high ground to the NNE of the Tract.

5) For PSD Class I, only winds from the W and WSW passing over CB intersect the Flattops Class I Wilderness Area. A further constraint imposed was that at least a 6-hour dwell or residence time over Flattops for the specified wind direction and stability class was required (after the first air parcel reached Flattops).

Data used to generate the above summaries for 1981 follow:

(1) Diurnal hourly stability classes by month for 1981; and
(2) Diurnal wind speed and direction by stability class by month for 1981.

TABLE 2.3.5-1

Summary of Meteorological Worst Case Candidates 1977 - 1981

Class II

STABILITY CLASS	WIND PERSIS-TENCE (hrs)	WIND SECTOR	WIND SPEED (mps)	$\sigma_{.WS}$(1)	AMBIENT AIR TEMP (°K)	BAR. PRESSURE (mb)	DATE
A	8	WNW	1.3	16.03	271	789	1-23-77
A	6	W	1.0	-	265	780	3-03-77
B	7	WNW	2.0	18.67	266	786	12-08-80
B	7	WNW	2.9	15.52	272	787	4-15-77
B	14	WNW	3.7	19.97	266	776	3-02-77
B	9	SSW	3.3	20.89	273	794	3-06-77
B	13	NW	3.3	-	272	786	4-19-77
B	7	NNW	1.9	24.29	270	791	1-23-77
D	10	S	11.9	95.41	285	781	5-16-77
E	9	SSW	1.5	9.58	274	(790)	11-26-77
E	6	SSW	1.9	-	280	794	1-13-78
E	6	SSW	3.4	16.76	288	785	4-26-81
F	8	SSW	1.1	9.16	275	(790)	10-23-77
F	6	SSW	1.6	10.64	273	(790)	10-08-77
F	6	SSW	1.6	-	280	(790)	12-25-77
F	6	SSW	2.5	-	272	785	-
Annual	-	all	all	-	281	787	1981

( ) indicates annual average value when actual data are not available.
(1) σ = Horizontal wind direction standard deviation (deg) x WS - Wind Speed (mps). Vertical wind speed is not measured.

TABLE 2.3.5-2

Summary of Meteorological Worst Case Candidates 1977 - 1981

Class I

STABILITY CLASS	WIND PERSIS-TENCE (hrs)	WIND SECTOR	WIND SPEED (mps)	$\sigma_{.WS}$(1)	AMBIENT AIR TEMP (°K)	BAR. PRESSURE (mb)	DATE
D	14	SW	2.6	13.30	272	778	1-08-80
D	11	WSW	2.6	24.64	294	774	2-20-80
D	9	W	3.9	37.50	267	772	12-27-81
D	14	WNW	5.2	41.60	272	(790)	12-04-77
D	10	SW	3.9	43.99	273	777	3-07-80
D	7	W	7.2	58.29	288	(790)	11-16-77
D	10	WSW	7.9	-	281	772	9-18-78
Annual	-	all	all	-	281	787	1981

( ) indicates annual average value when actual data are not available

(1) σ = horizontal wind direction standard deviation (deg) x WS = wind speed (mps). Vertical wind speed is not measured.

LIST OF TABLES

LIST OF TABLES (Contd)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	E	F	F	( )	( )	( )	F	F	( )	D	C	C	D	D	D	E	F	F	( )	( )	F	F	F	( )
2	F	F	F	E	F	E	F	F	E	D	C	B	B	C	C	D	D	E	E	E	E	F	E	E	E
3	D	E	F	F	E	E	E	F	E	E	D	B	B	B	C	C	D	E	F	E	E	E	E	E	E
4	E	F	F	F	E	E	E	E	E	D	D	C	C	C	B	B	D	D	D	D	D	D	D	E	D
5	D	E	D	D	D	E	D	D	D	D	D	C	C	B	B	A	D	D	D	D	D	E	D	D	D
6	D	D	D	D	E	F	E	E	F	F	( )	D	D	D	D	D	D	( )	E	E	F	F	( )	F	E
7	F	F	F	F	F	F	F	F	F	F	E	F	E	D	D	D	D	E	E	E	E	( )	F	F	E
8	F	E	F	( )	F	F	F	F	F	E	E	( )	D	D	D	D	E	E	E	E	F	F	F	F	E
9	F	F	F	F	F	F	F	F	F	( )	D	D	D	D	D	D	D	E	E	E	E	E	F	( )	E
10	( )	F	F	F	F	F	F	( )	E	E	D	D	D	D	C	D	D	E	E	E	E	E	( )	F	E
11	F	F	E	F	( )	E	( )	( )	F	F	D	C	C	D	D	D	D	E	E	E	E	E	F	F	E
12	F	F	F	E	F	E	( )	( )	( )	F	E	D	C	D	D	D	D	E	E	E	E	F	F	( )	E
13	F	F	F	F	F	F	F	( )	F	( )	D	C	B	D	C	D	D	E	E	E	E	E	( )	E	E
14	F	F	F	F	F	F	( )	F	F	( )	( )	( )	( )	( )	C	C	D	E	E	F	F	E	E	E	E
15	F	F	F	E	E	E	E	( )	E	E	D	C	D	D	D	D	( )	E	E	E	E	E	F	E	E
16	E	E	E	E	E	E	E	E	E	B	C	A	A	B	A	C	C	D	E	D	E	E	D	E	D
17	E	E	E	E	E	F		E	F	D	C	D	C	C	C	C	D	E	E	E	F	F	( )	E	E
18	E	( )	F	F	F	F		E		E		C	C	B	B	C	D	D		E	E	E	E	E	D
19	E	E	E	E	E	( )	E	F	E	E		C	D	C	C	C	D	D	E	E	F	F	F	F	E
20	F	E	F	F	F	E	( )	E	E	D	B	B	B	C	D	C	D	E	E	E	E	E	E	E	D
21	E	E	E	F	( )	F	F	F	( )	D	( )	C	D	C	B	D	D	E	E	E	F	( )	F	F	E
22	E	F	F	F	F	F	F	E	( )	E	D	D	C	C	C	D	D	E	E	E	E	F	F	F	E
23	( )	F	( )	F	F	F	F	F	F	D	D	C	C	D	C	D	D	D	E	F	F	F	E	E	E
24	E	E	D	E	E	E	E	F	E	B	D	D	D	D	B	C	D	D	D	D	D	D	C	D	D
25	E	E	E	E	( )	E	E	E	D	B	A	A	B	B	B	B	D	D	D	F	E	F	F	F	D
26	E	E	E	E	F	E	E	F	E	B	B	C	C	B	B	B	C	D	D	D	D	( )	D	E	D
27	( )	D	D	D	D	E	E	E	D	C	B	B	B	B	B	C	D	D	D	D	D	D	D	D	D
28	D	D	D	D	D	D	D	D	D	D	C	C	C	D	C	D	B	D	E	E	D	D	D	D	D
29	D	D	D	D	D	D	D	E	D	D	D	B	C	B	B	B	B	C	D	D	D	D	D	D	D
30	E	E	D	E	E	E	E	D	D	D	D	D	D	C	C	C	C	D	D	D	E	D	E	D	D
31	D	D	E	F	F	E	E	D	D	C	B	C	C	C	D	D	C	D	D	D	D	E	D	D	D
AVE	E	E	E	E	E	E	E	E	E	E	D	C	C	C	C	C	C	D	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 6 B= 42 C= 68 D=206 E=208 F=158 HOURS MISSING= 50

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	D	D	E	D	D	D	D	D	D	D	D	E	E	D	C	D	D	E	E	F	F	F	( )	D
2	F	F	F	F	F	F	F	F	F	E	( )	D	D	D	D	B	D	E	E	E	E	F	F	E	E
3	F	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	E	E	E	E	E	F	E
4	F	F	E	E	F	D	E	E	E	D	D	D	D	D	C	C	D	D	E	E	E	E	( )	E	E
5	F	F	E	F	F	F	F	E	F	E	D	D	D	D	C	B	D	D	E	E	E	E	E	F	E
6	E	F	F	F	F	E	E	E	E	D	C	B	B	D	C	D	D	D	E	E	F	E	E	E	E
7	F	F	F	F	F	E	F	F	F	E	D	D	C	B	C	C	C	D	E	F	F	F	F	F	E
8	F	E	E	E	E	E	E	E	D	C	C	C	D	C	C	C	C	D	E	E	E	E	E	E	D
9	E	D	D	D	D	D	D	D	C	B	B	B	B	B	B	D	D	C	D	D	D	D	D	D	C
10	D	D	B	B	B	D	D	C	B	B	B	A	B	B	B	B	B	D	E	F	F	E	F	F	C
11	E	E	E	E	D	E	E	E	D	D	D	C	C	C	C	C	B	C	C	D	D	D	D	D	D
12	D	E	E	E	E	E	F	E	D	D	D	D	D	D	D	D	C	D	E	E	E	F	F	F	E
13	F	E	F	F	F	F	F	F	E	D	D	D	D	C	C	B	D	D	D	E	E	F	F	E	E
14	E	E	E	E	E	E	F	E	D	D	D	D	B	C	C	C	D	D	E	E	E	( )	E	E	D
15	E	D	D	D	E	E	F	E	D	D	D	C	C	D	D	D	D	D	E	E	E	F	E	E	D
16	E	E	E	E	F	F	F	F	E	D	D	B	C	B	C	C	C	D	E	E	F	F	F	F	E
17	F	F	E	F	F	E	E	E	E	E	D	D	B	C	C	D	D	D	E	E	E	E	E	E	E
18	E	F	E	E	E	F	F	F	F	D	D	D	C	B	B	C	C	E	E	E	E	F	E	F	E
19	F	E	E	E	E	E	F	F	E	D	C	B	B	( )	( )	( )	D	D	D	D	D	D	D	D	D
20	D	D	D	D	E	E	E	D	D	C	C	C	C	C	B	C	D	C	D	D	D	D	D	E	D
21	E	E	D	D	D	D	E	D	D	C	B	B	B	B	B	A	B	D	D	E	F	( )	E	F	D
22	E	F	F	E	E	F	F	E	D	D	C	C	B	D	B	B	C	D	E	F	E	F	F	F	E
23	E	F	F	F	F	F	E	F	F	D	B	B	B	B	B	B	C	D	E	E	F	E	F	F	E
24	F	F	F	F	F	E	E	E	E	( )	( )	D	C	C	C	D	D	D	E	E	E	D	E	E	E
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26	E	E	E	E	D	D	D	D	D	D	D	D	D	D	C	B	B	D	E	D	D	D	D	D	D
27	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	F	E	E	D
28	F	F	E	E	E	E	F	E	D	D	B	B	B	B	C	C	C	D	E	F	E	E	E	E	D
AVE	E	E	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	D	E	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 2 B= 55 C= 65 D=210 E=199 F=131 HOURS MISSING= 10

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	E	F	F	F	F	( )	F	F	E	D	C	B	C	C	C	B	C	D	E	E	E	E	E	E	D
2	E	E	E	E	E	E	E	E	E	D	B	B	B	B	C	D	D	D	D	E	D	D	E	E	D
3	E	E	E	E	E	F	F	F	E	D	D	D	D	C	C	D	C	D	D	D	D	D	D	D	D
4	D	D	D	D	D	D	D	D	D	B	B	B	B	B	B	C	C	D	E	E	E	F	F	F	D
5	F	F	F	F	F	E	F	F	C	C	B	C	B	B	B	B	D	D	E	E	E	E	E	E	D
6	F	( )	E	E	E	E	E	E	E	D	( )	C	C	E	B	F	B	F	F	( )	D	E	E	E	E
7	E	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
8	E	F	E	( )	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	D	E	E	E	E
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11	F	F	E	E	E	F	E	( )	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D	D	E
12	D	D	D	D	E	D	E	D	D	B	D	D	D	C	D	D	D	D	D	F	E	E	F	F	D
13	F	( )	F	F	F	F	F	F	( )	( )	( )	( )	C	B	B	C	D	E	E	E	E	E	F	F	E
14	F	F	F	E	E	F	E	E	D	D	C	B	B	C	B	D	C	D	E	E	E	E	E	E	D
15	E	E	E	F	E	E	F	F	D	D	D	D	B	D	C	C	C	D	E	F	F	F	F	F	E
16	E	F	F	E	E	F	E	E	D	B	C	C	C	C	C	D	D	D	D	D	D	D	E	E	D
17	E	D	D	D	D	D	D	C	D	D	C	C	D	C	C	D	C	D	D	E	E	E	E	E	D
18	D	D	D	D	D	D	E	E	D	C	C	D	C	D	C	C	C	D	D	E	E	E	E	E	D
19	E	E	E	E	E	E	E	E	D	C	C	C	B	C	B	C	D	D	D	D	D	D	D	D	D
20	D	D	E	E	E	E	E	E	D	B	B	C	D	C	C	B	D	D	D	E	E	F	E	E	D
21	D	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	C	D	D	E	F	F	E	F	D
22	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	C	D	D	E	E	E	E	( )	E	E
23	E	E	E	E	E	F	E	D	D	D	C	B	C	B	C	C	D	D	E	E	F	F	F	F	D
24	F	F	E	D	D	E	E	E	D	B	D	D	C	C	D	C	D	D	D	E	F	F	F	F	E
25	F	F	F	F	F	F	F	F	D	C	C	B	B	B	B	C	D	D	D	D	E	D	E	E	D
26	E	D	E	E	E	E	E	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	E	D	C	D
27	D	B	D	D	D	D	D	D	D	D	D	D	D	C	C	B	B	B	D	E	E	E	E	E	D
28	D	E	D	D	D	D	D	D	D	C	D	C	D	D	D	D	D	D	D	D	D	D	E	E	E	D
29	E	E	F	E	E	E	E	D	D	D	D	D	B	B	B	C	C	C	D	E	E	D	D	E	D
30	E	E	D	D	D	B	B	B	D	C	D	D	D	B	E	D	D	D	D	E	E	F	E	E	D
31	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
AVE	E	E	E	E	E	E	E	E	D	D	C	C	C	C	C	C	D	D	D	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 0 B= 50 C= 77 D=276 E=218 F=111 HOURS MISSING= 12

(01/06/83-MPI)

II- 106

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	E
2	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D	D	D	D
3	D	D	D	D	D	D	D	D	B	C	D	D	D	D	D	C	D	D	D	D	D	D	D	E	D
4	E	E	E	E	D	D	D	D	D	D	D	E	E	D	D	E	D	D	D	D	E	E	F	F	E
5	F	F	( )	F	F	F	F	F	D	D	D	E	E	E	D	D	D	D	E	E	E	E	E	E	E
6	E	E	E	E	E	D	D	D	D	D	D	D	D	D	C	D	C	D	E	E	F	E	E	E	D
7	E	E	E	E	( )	F	F	E	D	D	D	C	B	B	B	C	C	D	E	D	D	E	E	D	D
8	D	D	D	D	D	D	D	D	C	B	B	B	B	B	B	B	B	D	D	E	E	F	E	F	D
9	E	F	F	E	E	D	D	D	C	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
10	E	F	E	D	E	E	F	E	C	B	C	C	D	D	D	D	C	D	E	E	E	E	E	F	D
11	E	E	E	F	E	E	E	D	C	C	C	D	D	D	D	D	D	D	E	F	E	E	F	E	E
12	E	E	E	E	E	E	E	D	B	B	C	D	D	C	C	C	C	D	E	E	E	E	E	E	D
13	E	E	E	E	F	E	E	D	B	D	B	B	B	C	C	C	D	D	E	E	E	F	F	F	D
14	F	F	( )	F	F	F	F	D	D	D	D	B	B	C	D	B	D	E	E	E	F	E	D	D	D
15	D	E	D	D	D	D	D	D	C	B	B	B	C	D	D	D	C	C	D	D	E	E	F	F	D
16	F	F	F	F	E	F	F	E	D	C	B	B	B	D	D	B	D	D	E	E	E	E	E	F	E
17	F	F	F	F	F	F	F	E	C	B	B	B	B	B	B	B	B	C	E	F	E	F	F	F	D
18	F	F	F	F	F	F	E	D	D	D	C	D	C	D	B	D	D	D	D	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	B	D	E	E	E	F	F	D
20	F	E	F	E	E	E	F	E	D	D	D	D	D	D	D	C	C	C	D	E	E	E	E	F	E
21	E	F	E	F	F	F	E	D	B	C	C	C	C	C	D	D	B	C	D	D	D	D	D	D	D
22	E	E	E	E	E	E	E	( )	D	B	B	A	B	B	B	B	B	C	D	E	E	F	F	F	D
23	F	E	E	F	F	F	F	D	D	D	B	B	B	B	B	B	B	D	E	E	E	F	F	F	D
24	F	F	F	F	F	F	F	E	C	C	A	C	B	B	B	C	C	D	D	F	F	F	F	E	D
25	E	F	F	F	F	F	F	D	D	B	B	C	D	D	D	D	C	D	D	F	F	E	E	E	E
26	F	E	E	E	E	E	E	D	B	C	D	D	D	D	D	D	D	D	E	E	F	E	E	F	E
27	E	F	F	F	F	F	F	D	D	D	B	B	C	D	C	C	B	D	D	D	D	D	D	D	D
28	E	E	F	E	E	E	D	B	C	C	B	B	B	B	B	B	B	D	D	E	E	E	E	F	D
29	F	( )	F	F	F	F	E	D	C	D	B	C	C	D	B	B	B	C	D	E	E	F	( )	( )	D
30	F	F	F	F	E	E	E	D	C	C	C	B	B	B	C	B	C	D	E	E	F	F	F	F	D
AVE	E	E	E	E	E	E	E	D	C	C	C	C	C	C	C	C	C	D	E	E	E	E	E	E	D

TOTAL OCCURRENCES: A= 2 B= 80 C= 67 D=254 E=182 F=128 HOURS MISSING= 7

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	E	F	D	D	B	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	D	D	D	E	D	D	D	D	D	E	E	( )
3	E	E	E	E	E	E	E	D	D	D	D	E	D	C	E	A	E	E	E	E	E	E	E	E	E
4	E	E	E	( )	E	( )	E	E	E	E	D	E	E	E	D	D	A	D	D	D	E	F	F	F	E
5	F	E	F	F	( )	F	F	E	E	D	E	D	A	C	D	D	D	D	D	D	D	D	D	D	D
6	D	E	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D
7	D	D	E	E	E	E	F	( )	D	D	D	B	D	B	B	C	B	C	D	E	F	F	E	D	D
8	D	E	E	F	E	F	F	E	D	C	B	C	D	E	D	C	C	B	D	D	D	D	D	D	D
9	D	D	D	D	D	D	D	D	D	E	E	E	C	D	D	B	D	D	D	C	E	D	D	F	D
10	F	E	E	F	F	F	F	E	B	B	B	A	C	D	D	B	D	D	E	E	E	D	D	D	D
11	D	D	E	E	E	D	C	C	E	E	B	B	B	D	D	D	E	D	C	A	D	E	F	F	D
12	F	F	F	E	F	F	F	E	E	E	C	D	C	B	D	C	D	D	C	D	E	E	( )	E	E
13	E	F	E	E	E	E	E	D	C	E	D	D	B	A	E	D	D	D	D	D	E	F	F	F	D
14	F	F	F	F	E	F	E	D	D	B	D	B	C	C	D	D	D	D	E	E	E	E	E	E	E
15	E	E	E	D	E	E	D	D	D	D	D	D	D	E	D	B	D	D	D	D	D	D	D	D	D
16	E	E	E	E	E	E	E	D	D	D	B	B	B	B	C	B	B	B	D	C	D	D	E	( )	E	D
17	E	E	E	E	D	C	D	D	D	D	D	D	D	D	D	D	B	D	D	C	D	D	C	D	D
18	D	D	D	D	D	D	D	D	C	D	D	D	D	D	C	B	A	D	D	E	F	F	( )	E	E	D
19	E	E	E	F	F	F	E	E	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
20	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D
21	E	E	E	E	E	D	E	D	D	( )	D	D	D	D	D	D	D	D	D	D	( )	E	F	F	E	E
22	E	F	F	E	E	E	D	B	B	B	B	B	D	E	D	D	D	E	D	E	E	E	D	D	D
23	D	E	E	E	D	D	D	D	A	D	D	E	E	E	E	D	E	E	D	B	E	E	E	E	D
24	E	( )	( )	F	F	F	F	E	D	D	D	D	D	D	D	D	E	E	E	F	E	E	F	E	E
25	E	F	F	F	E	F	F	E	D	D	D	D	C	E	D	E	D	D	D	E	F	F	F	E	E
26	E	E	E	F	E	E	E	D	A	A	D	B	D	D	C	C	D	D	D	D	D	E	D	D	D
27	E	D	E	E	E	E	D	D	D	C	( )	( )	( )	( )	B	B	B	C	C	C	C	D	E	E	D
28	E	E	E	E	E	E	E	E	E	E	D	A	E	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	E	D	D	D	D	E	E	D	E	E	E	F	( )
30	F	E	F	E	F	F	F	E	E	D	B	A	A	A	D	A	D	D	D	D	F	F	F	F	D
31	F	E	E	E	E	E	E	E	E	D	E	C	A	E	E	D	D	D	D	E	E	E	F	E	E	E
AVE	E	E	E	E	E	E	E	D	D	D	D	C	D	D	D	C	D	D	D	D	E	E	E	E	D

TOTAL OCCURRENCES: A= 16 B= 41 C= 38 D=268 E=227 F= 79 HOURS MISSING= 79

(81/06/R3-HP1)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	D	D	D	C	B	B	( )	D	E	D	( )
4	D	D	D	D	A	E	F	E	E	E	E	A	D	D	D	A	E	E	E	D	E	E	E	F	D
5	F	E	F	F	E	F	F	E	D	E	E	E	A	B	D	E	E	D	E	D	F	F	F	F	E
6	F	F	F	F	F	F	F	E	C	B	B	B	B	B	B	B	C	D	E	E	E	F	E	E	D
7	D	F	E	F	F	F	F	E	D	D	C	D	D	D	D	D	D	D	E	E	E	F	E	F	E
8	E	E	E	E	E	E	E	D	D	C	D	D	D	D	D	D	C	D	D	E	E	F	E	E	D
9	E	D	D	E	E	F	E	D	E	D	B	D	B	D	D	C	D	C	D	C	E	E	E	E	D
10	F	F	F	E	E	( )	E	D	B	A	B	B	D	D	D	D	D	D	D	D	C	D	D	D	D
11	D	E	E	E	F	F	E	D	C	E	D	C	B	B	B	B	C	D	D	F	E	E	D	D	D
12	D	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
13	E	E	E	E	E	D	D	D	D	A	B	D	B	D	D	D	D	D	C	B	D	C	C	D	D
14	D	D	E	E	E	E	E	D	C	D	C	B	B	D	A	D	C	C	B	D	D	E	D	D	D
15	E	F	F	E	E	E	E	D	D	A	C	B	B	B	D	B	B	D	D	D	D	A	( )	E	D
16	F	F	F	F	F	F	F	D	C	B	B	B	B	B	D	D	D	D	D	D	D	D	D	D	D
17	D	D	D	D	F	F	E	D	A	B	C	D	( )	D	D	D	D	D	D	D	D	D	E	E	D
18	E	E	E	E	F	F	F	F	E	D	B	A	B	D	B	B	B	D	E	D	E	F	F	F	D
19	F	F	E	E	F	F	F	E	B	C	D	D	D	B	C	C	C	D	D	D	E	E	E	E	D
20	E	E	F	F	F	F	F	E	B	D	B	D	B	B	C	C	C	D	D	D	E	F	F	E	D
21	F	F	E	D	E	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
22	( )	E	E	F	F	( )	F	D	C	E	D	A	A	B	A	D	D	D	D	E	F	F	F	F	D
23	F	F	F	F	E	F	F	F	E	D	C	D	B	D	D	D	D	D	D	E	E	E	E	E	E
24	F	F	F	F	E	F	F	E	D	C	D	A	C	D	B	B	B	D	D	E	E	E	E	F	D
25	E	F	F	F	E	F	F	E	D	D	D	A	A	D	D	D	B	E	D	E	E	F	F	E	E
26	E	E	E	E	E	E	D	D	D	D	B	B	B	B	B	B	D	D	D	B	E	E	D	E	D
27	E	E	F	F	F	E	F	E	E	D	B	B	B	B	B	B	D	C	B	D	E	D	E	E	D
28	E	E	E	E	E	F	F	E	E	B	A	C	E	E	D	A	D	B	D	E	E	E	E	F	D
29	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AVE	E	E	E	E	E	F	F	E	D	C	C	C	C	C	C	C	D	D	D	D	E	E	E	E	D

TOTAL OCCURRENCES: A= 19 B= 69 C= 36 D=204 E=173 F=104 HOURS MISSING=115

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	E	E	F	F	( )	E	E	B	D	C	D	D	B	D	D	B	A	A	D	D	E	E	E	D
2	D	D	D	D	D	D	E	D	E	E	D	E	E	D	D	D	C	D	E	D	D	E	E	E	D
3	E	E	E	E	E	E	E	D	D	D	C	B	D	D	E	D	D	D	E	D	D	E	E	E	D
4	( )	E	E	E	F	F	F	E	E	D	D	E	D	E	E	D	D	D	E	D	F	F	F	F	E
5	F	F	F	F	F	E	F	E	E	D	B	( )	A	A	E	E	D	E	E	E	F	F	F	F	E
6	F	F	F	F	F	F	F	D	E	E	D	D	B	C	D	D	D	C	E	C	D	E	F	F	E
7	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
8	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	E	D	D	D	D	D	D	D	E	E	( )
9	E	F	E	F	F	E	D	D	D	C	B	D	D	A	D	D	B	B	D	D	E	E	E	E	D
10	E	E	E	F	F	F	E	D	D	D	D	B	B	D	D	D	E	D	E	D	D	E	F	F	E
11	F	F	F	F	F	F	E	D	C	D	B	B	D	E	E	B	D	D	D	D	E	E	E	E	E
12	E	F	F	F	F	( )	E	D	D	E	D	E	D	A	B	D	D	D	D	D	E	E	E	E	D
13	E	E	E	E	E	E	E	E	D	D	D	D	D	D	C	A	B	B	D	E	E	E	E	E	D
14	F	F	E	E	E	E	E	D	E	E	F	E	D	E	D	D	E	D	D	D	E	F	F	( )	E
15	F	E	F	F	F	F	( )	E	D	E	E	D	D	D	D	D	E	E	D	E	F	F	F	F	E
16	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	D	D	D	D	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	D	D	E	D	E	E	E	D	D	E	E	E	F	F	F	E
18	F	F	F	F	F	F	F	E	D	D	D	A	A	D	D	E	E	E	D	E	F	D	E	F	E
19	E	F	( )	F	F	( )	E	D	D	D	B	D	D	D	D	D	B	D	D	E	F	F	E	D	D
20	F	F	F	( )	F	F	F	E	E	D	B	B	C	D	D	D	D	D	D	E	E	F	F	F	E
21	E	E	F	F	F	F	F	E	D	B	C	B	B	B	B	C	C	C	E	F	F	E	F	F	D
22	F	F	( )	F	F	F	F	E	D	B	C	B	B	C	D	D	C	D	D	D	E	( )	F	D	D
23	E	F	F	F	F	F	F	E	D	D	C	B	B	B	B	C	E	D	D	D	E	E	E	E	D
24	F	F	F	F	F	F	F	D	D	D	B	B	B	B	D	C	D	C	B	D	D	E	E	E	D
25	D	D	E	E	D	E	E	D	C	D	D	C	C	C	D	D	D	D	E	E	E	E	E	E	D
26	E	E	E	E	E	E	E	D	D	D	D	D	C	C	B	C	B	D	D	D	E	( )	E	E	D
27	E	E	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	B	D	C	E	F	F	F	E
28	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	F	F	F	( )	( )	E
29	F	F	F	F	F	F	F	E	D	D	D	D	D	D	E	E	A	D	E	E	E	E	E	F	E
30	F	F	F	F	E	E	F	D	D	C	B	B	C	D	C	B	C	C	D	F	E	F	E	E	D
31	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
AVE	E	F	F	F	F	F	E	D	D	D	C	C	C	C	D	D	D	D	D	D	E	E	E	E	E

TOTAL OCCURRENCES: A= 10 B= 44 C= 34 D=225 E=203 F=154 HOURS MISSING= 74

(01/06/83-HPI)

... CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	B	C	B	C	D	E	F	F	F	F	( )
4	F	F	F	F	( )	F	F	D	C	B	B	B	B	B	B	B	B	C	D	E	E	F	F	F	D
5	F	F	F	F	( )	F	F	E	D	D	B	B	C	C	B	B	C	D	D	F	F	F	( )	F	D
6	F	F	F	F	F	F	D	C	C	B	B	B	B	B	C	C	D	D	E	E	E	F	E	F	D
7	F	F	F	F	F	( )	E	B	A	A	B	B	B	B	B	B	B	C	D	E	E	E	E	E	D
8	F	F	F	F	F	F	( )	D	C	B	A	A	B	B	B	B	B	D	E	E	F	F	D	E	D
9	D	E	E	F	F	F	E	D	B	B	A	B	B	B	E	D	D	C	D	E	E	E	D	D	D
10	D	F	E	E	F	E	E	D	C	B	B	C	C	D	D	D	D	D	E	E	E	E	E	F	D
11	F	E	E	E	E	E	E	D	D	C	C	D	( )	D	D	D	D	D	D	E	F	F	E	E	E
12	E	E	E	E	F	F	F	( )	D	D	D	A	B	D	D	C	E	( )	E	E	E	E	F	F	E
13	F	F	F	F	F	E	E	E	E	E	E	D	D	E	D	D	D	D	D	D	E	E	F	E	E
14	E	E	E	E	E	E	E	E	E	D	A	E	E	E	E	E	D	D	( )	E	E	F	F	F	E
15	E	E	E	E	F	F	F	F	E	D	D	A	C	D	E	E	D	D	D	E	E	E	F	F	E
16	E	F	F	F	( )	( )	E	E	E	E	D	D	E	D	E	D	D	D	D	E	F	F	E	F	E
17	F	F	F	E	E	( )	F	E	E	E	E	E	E	D	E	E	E	D	D	D	E	E	E	E	E
18	F	F	F	F	F	F	E	E	E	E	C	D	B	B	C	D	D	D	B	E	F	F	F	E	E
19	F	F	F	F	F	F	F	E	E	D	D	A	C	E	E	D	D	D	D	E	F	F	E	E	E
20	E	E	E	E	F	E	E	F	E	D	B	E	D	D	D	D	C	C	D	E	E	F	F	F	E
21	F	F	F	F	F	F	F	F	D	D	B	D	C	D	E	D	E	D	E	E	E	E	F	F	E
22	E	F	F	E	E	E	E	E	D	B	A	B	B	B	B	C	D	D	D	E	F	F	E	E	D
23	E	E	F	F	F	F	( )	F	D	B	A	D	E	D	D	D	D	D	D	D	E	E	E	F	E
24	F	F	E	F	F	F	F	F	E	E	E	( )	( )	D	E	D	D	E	E	E	E	F	F	F	E
25	F	F	F	F	F	F	F	F	E	F	E	D	E	D	D	D	D	A	E	E	F	E	F	F	E
26	( )	F	F	( )	F	F	F	F	E	E	D	D	D	E	D	D	D	D	D	D	E	E	F	F	E
27	F	F	F	E	E	F	F	E	E	F	E	E	E	D	E	D	D	D	E	E	E	F	F	F	E
28	E	F	F	E	E	E	E	F	E	E	E	D	E	D	D	D	D	C	E	F	E	E	D	E	E
29	F	F	E	E	E	E	E	D	D	D	D	D	D	D	E	D	D	D	E	E	F	F	E	E	E
30	E	E	E	D	D	D	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	D	E	E	E
31	E	E	E	F	F	F	F	E	E	E	D	D	B	B	D	D	D	D	D	E	E	E	E	E	E
AVE	E	F	F	F	F	F	E	E	D	D	C	C	C	C	D	D	D	D	D	E	E	E	E	F	E

TOTAL OCCURRENCES: A= 12 B= 55 C= 29 D=161 E=232 F=177 HOURS MISSING= 78

(01/06/83-HP1)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	F	F	F	F	F	F	F	F	E	D	B	C	C	B	B	B	B	C	E	E	E	E	E	E	D
2	E	E	E	E	E	E	E	E	D	E	D	B	B	C	D	C	A	B	B	C	D	C	E	E	D
3	E	E	E	E	E	E	F	E	D	D	D	E	C	B	C	E	E	D	E	F	F	( )	F	F	E
4	F	F	F	F	F	F	F	E	E	D	D	C	B	B	B	B	B	C	E	E	D	D	D	D	D
5	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	C	D	D	D	D	D	D	D	D	D
6	D	D	D	D	D	( )	D	D	D	D	D	D	A	D	B	D	C	D	E	E	E	D	E	E	D
7	D	D	D	D	D	D	D	D	D	D	E	D	E	E	C	D	D	E	E	E	E	F	F	F	E
8	F	F	E	E	E	E	F	F	E	E	E	E	C	E	D	D	D	C	C	E	E	E	E	E	E
9	F	F	F	E	E	E	E	E	D	E	( )	A	D	D	B	D	E	E	E	F	E	D	E	E	E
10	F	E	E	E	E	F	E	E	E	E	D	E	A	E	D	D	E	E	E	F	E	E	F	F	E
11	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	D	E	E	F	E	E	E	( )
12	F	E	E	F	F	F	F	F	E	D	E	D	D	D	B	B	C	E	E	F	F	E	E	E	E
13	E	F	F	F	F	F	( )	E	E	E	E	E	E	D	D	E	E	E	E	E	E	F	F	E	E
14	F	F	F	E	E	E	F	F	F	( )	E	D	E	D	E	E	E	E	E	E	E	F	E	E	E
15	F	F	F	F	E	E	F	( )	E	E	E	E	D	E	E	E	D	D	D	E	A	E	E	F	E
16	F	F	F	E	F	E	F	E	E	D	E	D	E	E	E	D	B	C	D	A	E	E	C	E	E
17	D	C	E	E	( )	D	E	F	E	E	E	E	E	E	E	D	D	D	B	A	B	E	E	F	D
18	E	F	F	F	E	F	( )	F	F	F	E	E	E	E	E	E	D	D	E	E	F	F	F	F	E
19	F	F	F	F	F	E	E	F	E	E	E	D	D	E	E	E	B	E	E	E	E	E	E	F	E
20	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	C	D	E	E	F	F	E	( )
21	D	E	E	E	E	F	F	F	E	E	B	D	D	D	D	D	B	B	E	E	F	F	E	F	E
22	E	E	E	F	E	F	F	F	D	D	E	D	D	D	D	C	D	D	E	F	F	F	F	F	E
23	E	F	F	F	E	E	E	E	E	E	D	D	B	B	D	D	D	D	E	D	E	E	E	D	E
24	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	E	E	E	E	E	E	E	E	E	E	( )
25	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E	E
26	E	E	E	E	E	F	E	E	E	E	E	E	D	D	D	E	D	D	E	E	( )	F	F	F	E
27	F	F	F	F	F	F	F	F	E	E	E	E	E	E	E	E	D	D	E	E	E	E	E	E	E
28	E	E	E	D	E	F	F	F	E	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E	E
29	F	E	E	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E	E	E
30	E	E	E	F	E	D	D	D	D	D	E	E	E	D	E	D	C	B	A	D	E	E	E	E	D
AVE	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 8 B= 30 C= 24 D=177 E=297 F=132 HOURS MISSING= 52

(01/06/83-HPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	E	F	F	E	E	( )	( )	F	E	E	E	D	D	E	D	D	D	F	F	D	E	D	E	E
2	F	F	E	E	D	D	D	B	B	D	D	D	D	D	B	D	D	D	E	E	E	E	D	D	D
3	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
4	D	B	D	D	D	D	D	D	B	B	D	E	B	B	D	D	D	D	D	D	D	D	D	D	D
5	E	F	E	E	E	E	D	E	E	D	E	E	D	D	D	D	D	E	E	E	F	F	F	F	E
6	E	E	E	F	F	F	F	F	F	F	E	B	D	E	E	E	E	E	F	F	E	E	E	F	E
7	F	F	D	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	E	D	D	E	E	E
8	D	D	D	C	E	E	D	D	( )	D	D	D	B	D	E	D	D	D	D	D	D	D	D	D	D
9	D	D	D	E	E	E	D	E	E	E	D	E	E	D	D	D	D	E	E	E	F	F	F	F	E
10	F	F	F	E	E	E	E	E	E	D	D	D	D	E	D	D	D	D	D	D	E	E	D	C	E
11	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	C	D	E	E	E	E	D	D	E	D
12	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	D	D	C	D	D
13	D	E	F	F	E	E	E	F	E	D	D	C	D	D	D	D	D	D	E	E	E	D	D	D	E
14	D	D	D	D	E	D	D	E	E	D	B	D	D	C	B	B	D	D	D	D	E	E	( )	E	D
15	E	E	D	E	E	D	E	E	E	D	E	E	E	D	D	E	D	D	D	D	D	D	E	D	E
16	E	D	D	D	D	E	D	E	D	D	D	D	D	C	B	C	C	D	D	D	D	D	E	E	D
17	E	D	D	D	E	E	E	E	E	D	A	D	E	E	E	E	D	C	D	E	E	E	E	D	D
18	E	E	E	E	E	F	F	E	E	E	E	E	D	F	E	D	D	B	D	D	E	E	E	F	E
19	F	E	E	F	( )	F	F	F	F	F	E	F	E	E	E	D	C	E	E	F	E	F	F	F	E
20	F	F	F	F	F	F	F	F	E	D	B	B	D	D	D	D	C	D	E	E	E	F	F	F	E
21	E	E	D	E	E	F	E	( )	E	F	E	E	E	E	E	D	D	D	E	E	E	E	E	( )	E
22	E	F	E	E	E	F	E	F	E	E	D	D	D	E	E	D	C	A	C	E	F	F	F	( )	E
23	E	D	F	F	F	F	F	F	F	E	D	B	B	E	E	D	D	D	E	E	E	F	F	E	E
24	E	E	E	E	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
25	D	D	C	C	D	D	D	E	E	F	E	A	A	E	D	A	B	D	E	E	E	E	F	E	D
26	E	E	F	F	F	F	F	F	E	D	D	D	D	D	D	C	D	D	E	E	F	F	E	E	E
27	E	E	F	E	E	E	E	E	D	D	D	C	D	D	D	D	D	D	E	E	E	D	D	E	E
28	E	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
29	D	D	E	F	E	E	E	D	D	D	D	D	B	D	C	D	B	( )	( )	( )	( )	( )	( )	( )	( )
30	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	D	D	E	E	E	E	( )
31	E	F	F	F	F	F	F	F	F	E	D	E	E	E	( )	D	( )	( )	E	E	F	F	F	E	E
AVE	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 5 B= 22 C= 20 D=308 E=253 F=103 HOURS MISSING= 33

(01/06/83-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	E	F	F	( )	F	F	F	E	( )	D	D	D	D	D	D	D	D	E	E	E	E	F	F	F	E
2	E	E	E	F	F	E	F	F	( )	D	D	D	D	D	D	D	D	E	E	E	F	F	F	E	E
3	F	F	E	F	F	E	E	E	E	D	D	( )	C	D	D	D	D	E	E	E	F	F	F	F	E
4	F	F	F	F	F	F	F	F	F	D	E	D	D	D	D	D	D	E	E	F	F	F	F	F	E
5	F	F	F	F	F	F	F	F	F	E	D	C	D	D	D	D	E	F	F	F	F	F	F	F	E
6	F	( )	F	E	F	F	F	F	F	( )	D	C	C	D	C	D	D	D	E	E	D	E	E	D	E
7	E	E	D	E	E	E	E	E	D	C	B	B	B	B	B	C	E	E	E	E	E	E	E	E	D
8	F	F	E	E	E	E	E	E	E	D	A	B	B	B	B	B	D	E	E	E	E	F	E	E	D
9	F	F	E	E	F	F	F	F	F	D	D	C	B	D	D	D	D	E	E	F	F	F	F	F	E
10	F	F	F	F	F	F	F	F	E	D	C	D	C	C	D	D	D	E	E	F	E	F	F	F	E
11	F	F	F	F	F	F	F	F	E	D	D	B	B	C	C	D	D	E	F	F	F	F	F	F	E
12	F	E	F	F	E	F	F	F	E	D	C	B	B	B	B	C	D	E	E	E	E	E	E	F	E
13	E	F	F	E	F	E	E	D	D	D	D	D	C	D	C	C	D	E	D	E	E	E	E	D	E
14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	D
15	E	E	E	E	E	E	E	E	E	D	B	C	C	C	C	D	D	D	E	E	E	D	F	F	D
16	A	F	F	E	E	F	F	F	D	D	C	B	B	C	D	C	D	E	E	E	E	F	F	E	D
17	D	E	E	D	F	F	E	E	D	C	C	D	C	C	D	D	D	D	D	D	D	D	D	D	D
18	D	D	B	A	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D
19	E	E	E	F	E	F	F	F	F	F	D	D	D	D	D	D	D	E	E	E	E	E	F	F	E
20	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E
21	F	F	E	E	E	F	E	( )	E	D	C	D	D	D	D	D	D	E	E	E	E	E	E	E	E
22	E	E	E	D	D	D	D	D	D	D	C	C	C	D	C	D	D	D	D	D	D	D	D	D	D
23	D	D	D	D	E	F	E	E	D	D	C	D	D	C	D	D	D	D	E	D	D	E	E	E	D
24	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D
25	E	E	E	E	E	E	E	E	B	B	C	C	C	C	D	C	C	D	D	E	E	E	E	F	D
26	E	F	E	E	F	F	F	F	( )	E	D	D	D	D	D	D	D	E	E	F	E	E	E	F	E
27	F	F	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	D	D	E	E	E	F	E
28	E	F	F	E	E	E	F	E	( )	E	D	D	D	D	D	D	D	D	E	D	E	E	F	E	E
29	E	E	E	E	E	F	E	( )	E	D	( )	D	C	C	C	C	D	( )	D	D	D	D	D	D	D
30	E	E	E	E	E	F	E	F	E	D	D	C	D	D	D	D	D	D	D	D	D	D	E	D	D	D
AVE	E	E	E	E	E	E	E	E	E	D	D	C	C	D	D	D	D	E	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 3 B= 23 C= 48 D=257 E=217 F=160 HOURS MISSING= 12

(01/06/83-RPI)

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	D	E	E	F	F	( )	E	E	D	D	C	D	C	D	C	C	D	D	D	E	E	E	E	E	D
2	E	E	E	E	E	E	D	D	D	C	C	C	D	D	D	D	D	D	D	D	E	E	E	D	D
3	D	E	E	E	E	E	F	F	E	D	D	D	D	D	D	D	D	E	F	F	F	F	F	E	E
4	( )	F	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	E	E	E	E	E	( )	E	E
5	E	E	E	D	D	D	E	E	E	D	D	D	D	D	D	D	E	E	F	E	E	E	F	F	E
6	F	E	F	F	F	F	F	F	E	D	C	D	C	D	D	D	D	E	E	E	F	E	E	F	E
7	E	F	F	F	F	F	E	F	F	E	D	D	D	D	D	D	E	F	F	F	F	F	F	F	E
8	F	E	F	E	F	F	( )	F	F	E	( )	C	C	D	D	D	D	F	F	F	F	F	E	F	E
9	F	F	F	F	E	F	F	F	F	D	C	B	C	D	D	D	E	E	E	F	F	F	F	F	E
10	D	D	D	E	E	E	E	E	E	D	D	D	B	C	C	D	E	E	E	F	E	F	E	E	E
11	E	E	D	D	E	E	F	E	E	B	B	A	B	B	D	D	D	D	E	E	E	E	E	E	D
12	F	E	F	E	E	( )	E	E	D	C	B	B	B	B	C	D	D	E	D	D	D	D	E	D	D
13	E	D	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	D
14	F	E	E	E	E	E	D	D	D	D	D	D	C	D	C	D	D	D	E	E	D	D	E	D	D
15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	B	D	E	E	D
16	E	F	E	E	F	F	F	E	E	E	E	D	C	D	D	D	D	D	( )	D	E	D	D	D	E
17	D	D	D	E	D	E	D	D	D	D	A	B	D	D	D	D	D	E	F	F	F	F	F	F	D
18	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	E	E	E	E	E	E	E	D	E
19	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	D
20	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
21	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D	E	D	D
22	D	D	D	D	D	D	D	E	E	E	( )	D	D	D	C	D	D	D	C	D	D	D	E	E	D
23	E	F	F	F	F	F	F	F	F	E	E	C	C	D	B	C	D	E	E	F	F	F	F	F	E
24	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
25	D	D	D	E	E	E	D	D	D	D	D	C	C	C	D	C	D	E	D	D	D	E	E	E	D
26	D	D	D	E	E	E	E	E	E	D	C	C	C	C	C	C	C	D	D	C	D	D	D	D	D
27	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	D
28	E	E	E	E	F	F	F	E	E	E	E	D	C	D	C	C	D	D	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	E	D
31	E	D	E	E	E	E	E	F	E	E	E	D	D	D	D	D	C	D	D	E	E	E	E	F	E
AVE	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E	E

TOTAL OCCURRENCES: A= 2 B= 13 C= 41 D=351 E=212 F=117 HOURS MISSING= 8

(01/06/83-RPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CO-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
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(01/06/83-RPI)

HOUR WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD DEGREES AT 10M
WS MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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(01/06/83-MPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD[illegible]EGREES AT 10M
WS[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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01/06/83-HP11

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD [illegible]GREES AT 10M
WS [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD[illegible]REES AT 10M
WS[illegible]S AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																1 W								
4																	1 ESE							
5													1 SSW											
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13														1 NNW										
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18																1 SSE								
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25																								
26									1 ESE	1 SW														
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28												1 N												
29																								
30												1 W	0 S	1 SW		1 NW								
31												2 ESE												

HO[illegible] WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
[illegible]EGREES AT 10M
[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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14															1 NNW									
15										2 NW												2 SW		
16																								
17									1 NW															
18												1 SW												
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21																								
22												1 SSW	2 WSW		2 W									
23																								
24												1 NNW												
25												1 NW	2 N											
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28											2 SW					1 SW								
29																								
30																								

/06/83-RP1)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD [illegible]GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																		2	1					
2																		NW	W					
3																								
4																								
5													2	1										
6													WSW	W										
7																								
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9														1										
10														ESE										
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12														2										
13														WSW										
14																1								
15																SW								
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18												0	1											
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/06/83-HP[illegible]

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-THAL1
THAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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8											2 NNW	1 NNW												
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12												2 NW												
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31																								

(01/06/83-API)

HO[illegible] IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																	1 WNW							
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/06/83-RP1)

HOURLY WIND SPEED AND WIND DIRECTION FOR ST[illegible]Y CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
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17											0													
18											SSW													
19																								
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21																								
22																						1		
23																						N		
24																								
25												1	1			1								
26												SSW	SW			SW								
27																								
28																								
29																								
30																								
31																								

(01/06/83-RPI)

HC IND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8											1 NW													
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'06/H3-HP11

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS A
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
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17											0 NE													
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29																								
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(01/06/83-RPI)

HC[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD[illegible]GREES AT 10M
WS[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2												3 SW	3 WSW											
3												2 WNW	4 WSW	4 SSW										
4															4 SW	4 SSW								
5														3 NW	2 WNW									
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13													2 WNW											
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16										1 W				2 NW										
17																								
18														3 NW	2 NW									
19																								
20											2 WNW	3 NW	4 NNW											
21															3 NW									
22																								
23																								
24										4 SW					4 W									
25										1 NW			1 NNW	1 NW	1 NNW	2 NNW								
26										0 S	1 N			3 W	2 WSW	3 SSW								
27											3 SW	3 SW	4 SW	4 SSW	4 SW									
28																5 S								
29											5 SW		4 SW	5 SW	4 SSW	4 SSW								
30																								
31											1 WNW													

[illegible]/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN KNOTS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																4 SW								
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5																4 SW								
6												4 WSW	4 W											
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8																								
9										4 SW	4 SW	4 SW	4 SW	4 WSW	4 WSW									
10			4 NW	2 NNW	3 NW				4 WNW	4 NW	2 NW		3 NW	4 NNW	3 NNW	2 NNW	1 NE							
11																	5 SSW							
12																								
13																4 SSW								
14													4 SW											
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16												1 WSW		3 S										
17													3 WSW											
18														4 SW	3 SW									
19												4 SSW	4 SW											
20															3 N									
21											3 N	2 N	1 N	2 NNW	2 NNW		1 N							
22													1 NNE		2 NW	3 N								
23											4 SW	2 SW	2 SW	3 SW	4 SSW	4 SSW								
24																								
25										5 SSW														
26																5 S	2 SW							
27																								
28											4 SW	4 SW	4 SW	3 SW										

(01/06/83-RPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1												3 SSW				2 NNW								
2											4 S	5 SSE	4 SSE	4 S										
3										4 NNW	4 NNW	4 NNW	4 NNW	4 NNW	3 NNW									
4											4 SSW		3 WSW	3 SW	2 SW	1 SW								
5															2 WSW		2 SW							
6																								
7																								
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10																								
11																								
12										1 SSW														
13														4 WSW	4 WSW									
14												2 NW	3 NW		2 N									
15													2 N											
16										4 SSW														
17																								
18																								
19													4 SSW		5 SW									
20										4 SW	4 SSW					4 SSW								
21																								
22																								
23												2 NNW		1 NNW										
24										4 NW														
25												3 WSW	4 WSW	4 SW	4 S									
26																								
27		3 WSW														5 S	5 SSW	4 SSW						
28																								
29													5 SW	4 SW	5 SSW									
30						4 WNW	4 WNW	4 W						3 NNE										
31																								

/06/83-API)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD[illegible]GREES AT 10M
WS IN [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
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3									4 W															
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6																								
7													4 NNW	4 NNW	2 NNW									
8										3 SW	4 W	3 WSW	3 WSW	4 WSW	5 SW	3 SW	4 SW							
9																								
10										5 SW														
11																								
12									4 SSW	5 SSW														
13									1 WSW		1 NW	3 NW	1 N											
14												2 WSW	2 WSW			2 WNW								
15										4 SW	5 SSW	4 SW												
16											4 SW	4 WSW	4 WSW			4 WNW								
17										4 SW	5 SW	4 WSW	4 SW	4 SW	4 SW	4 WSW	3 SW							
18															5 NW									
19																		4 SW						
20																								
21									5 WSW								4 WSW							
22										2 NNW	2 NNW		3 NNW	3 NNE	3 N	2 N	2 NNW							
23											2 NNW	3 NNW	3 NW	1 NNE	1 NNE	2 N	2 N							
24													2 NNW	3 NW	2 N									
25										4 SW	5 SW													
26									5 SSW															
27											2 N	3 SW					5 WSW							
28								2 WNW			2 N	3 NW	2 NNW	3 NW	2 NW	3 NNW	3 NNW							
29											0 WSW				4 NW	3 NNW	4 N							
30												2 NNW	3 NNW	2 NNW		3 N								

/06/83-HPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD[illegible]GREES AT 10M
WS [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										2 NW														
2													3 SSW											
3																								
4																								
5																								
6																								
7												3 NW		4 W	4 WSW		4 WSW							
8											4 NNW							0 WSW						
9																1 NNW								
10									3 WSW	2 W	3 W					1 SSW								
11											3 WSW	4 WSW	4 WSW											
12														4 W										
13													2 NW											
14										5 SW		4 SW												
15																5 SW								
16										3 SW	3 WSW	3 WSW	4 WSW		4 WSW	4 WSW	4 NW							
17																	3 NNW							
18															1 SE									
19																								
20																								
21																								
22								3 WSW	4 WNW	4 NW	4 WNW	4 WNW												
23																				1 NE				
24																								
25																								
26												5 SSW												
27															5 SW	4 SW	4 WSW							
28																								
29																								
30											2 WNW													
31																								

/06/83-RPI)

WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
EGREES AT 10M
PS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																			1 WNW	2 E				
5																								
6										5 SW	4 SW	4 WS	4 WSW	1 NW 4 SW	4 SW	5 WS								
7																								
8																								
9											3 WNW		4											
10									1 E		4 SW	5 SW	NNW											
11																								
12													4 WSW	5 SW	5 SW	5 SW								
13											2 NW		4 WSW							5 NNW				
14												3 NNW	3 NNW						3 WNW					
15												3 NNW	2 N	2 NNW		2 NNW	2 NW							
16										5 SW 2 WNW	4 WS	4 WS	4 WSW	5 SSW										
17											2 SE		4 WNW		3 W	4 W	3 SW							
18									1 NW 4 W		4 W		4 W	5 W 4 WSW										
19																								
20														2 W										
21													2 WSW											
22															4 NW	4 NNW	4 NNW							
23																	3 N							
24											5 SW 4 SW	4 WSW 3 SW	3 W 4 SW	4 W 4 SW	3 WSW 4 NW	3 WNW 5 NNW				2 ESE				
25																			4 WNW					
26										2 WSW								3 WNW						
27																								
28																								
29																								
30																								

/06/83-RPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD [illegible]GREES AT 10M
WS [illegible]PS AT 10M

C8-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1									1 NNW					3 NNW			2 NW						
2																								
3												2 NW												
4																								
5											2													
6											3 E													
7													4 WSW											
8																								
9											1 W						4 NW	3 NW						
10												4 SW	4 SW											
11											2 W	4 NNW				5 NNW								
12															3 WSW									
13																	3 SW	2 SW						
14																								
15																								
16																								
17																								
18																								
19											4 W						4 WNW							
20											5 SW	4 SW												
21										4 SW		4 SW	3 W	2 SW	4 WSW									
22										4 SW		4 WSW	4 W											
23												4 SSW	4 SSW	4 SW	4 WS				2 NW					
24											3 SW	3 SW	4 SSW	5 SSW										
25																								
26															3 NW		3 NE							
27																		4 NNW						
28																								
29																								
30											4 SSW	4 SW				5 WSW								
31																								

/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3														4	4		4							
4										4 SW	5 SW	4 WSW	4 SW	4 SW	4 WSW	4 WSW	4 WSW							
5											2 NNW	2 WSW			4 W	3 W								
6										2 NW	2 WNW	2 NW	3 NNE	3 N										
7								1 WNW			2 NNW	3 NNW	4 NW	4 NNW	4 NNW	4 NNW	4 NNW							
8										1 WNW			3 NNW	3 NW	4 N	4 NNW	2 NW							
9									3 NW	3 NW		3 NW	3 NW	4 NNW										
10										2 NW	3 NW													
11													2 NW											
12																								
13																								
14																								
15																								
16																								
17																								
18													2 NNW	2 SSW					3 SW					
19											2 NNW													
20											5 NNW													
21																								
22										1 WSW		2 SSW	2 SSW	3 SW	3 WSW									
23										2 SW														
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31													4 SW	5 WSW										

(01/06/83-RPI)

WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
DEGREES AT 10M
MPS AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2											5 SW			4 SW	4 WSW	3 WSW	4 SW							
3												4 SW	4 SW					4 NE	4 NNE					
4														4 SW										
5													5 SW	5 SW	5 SW	4 SW	4 SW							
6																								
7															2 W									
8																								
9																								
10															2 N									
11																								
12																	1 NW							
13															3 SW	4 WSW								
14																								
15																								
16																								
17																	5 NNW							
18																			2 NE		2 SW			
19																								
20																	3 SE							
21																								
22											3 SW						2 NNW	2 SW						
23																								
24													2 NNW	2 NNW										
25																								
26																								
27																								
28																								
29																								
30																		3 N						

/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABI[illegible] CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRAIL
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2								3 SSW	4 SSW						4 SW									
3																								
4		5 SSW							3 SW	2 SSW			4 SSW	3 S										
5																								
6												3 W												
7																								
8													4 SW											
9																								
10																								
11																								
12																								
13																								
14											4 SW				4 WSW	3 W								
15																								
16															5 SW									
17																								
18																		2 NNW						
19																								
20											3 SW	3 SSW												
21																								
22																								
23												2 SW	2 WSW											
24																								
25																	3 SW							
26																								
27																								
28																								
29													4 WSW				4 WNW							
30																								
31																								

(01/06/83-RP1)

WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-THACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7											2 NW	2 NW	3 NNW	3 NNW	3 NNW									
8												1 NW	2 NW	2 NW	2 NW	2 NW								
9													2 N											
10																								
11												1 N	1 NNW											
12												4 SSW	4 SW	4 SW	4 SW									
13																								
14																								
15											4 SW													
16												4 SW	5 SSW											
17																								
18			4 WNW																					
19																								
20																								
21																								
22																								
23																								
24																								
25									4 WNW	4 WNW														
26																								
27																								
28																								
29																								
30																								

HOURLY WIND SPEED AND WIND DIRECTION FOR STA[illegible]Y CLASS B
WD IN DEGREES AT 10M
WS IN MPS AT 10M

C-B-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

	HOUR (LOCAL STANDARD TIME)																					
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9												4 SW												
10													4 SW											
11										1 E	0 E		4 W	4 NW										
12											4 SW	4 SSW	4 SSW	4 SW										
13																								
14																								
15																								
16																					2 N			
17																								
18												0 ENE												
19																								
20																								
21																								
22																								
23															2 NNW									
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								

(01/06/83-RPI)

WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
DEGREES AT 10M
MPS AT 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DAY
1												1 NNW	1 NNW												1
2											3 SW			3 WSW	2 SW										2
3															3 SW	3 SW									3
4												2 SW 4 NW	5 SSW 4 NW	5 SW											4
5																									5
6																									6
7																									7
8																									8
9																									9
10															2 NW										10
11												1 N	1 NW												11
12													1 NNW												12
13												2 NW			2 NW										13
14															4 SW	3 SW									14
15												2 SW													15
16											1 N					2 W	1 WSW								16
17											1 ESE		1 ENE	2 E	2 E	1 E									17
18												1 NW	2 NW			3 NNW									18
19												1 NW		2 W 4 NNW	2 NNW	2 N 4 NNW									19
20																									20
21												1 WNW		2 NW											21
22													2 NW	2 NNW	2 NNW										22
23												4 SSW	3 SSW		4 SW										23
24																5 NW							0 S		24
25																									25
26												2 NE	1 NNW				3 SSW								26
27										2 SSW						3 SSW									27
28										6 SSW	5 S	6 SSW		5 SSW											28
29												6 SSW					4 S								29
30													3 SW	5 SW	3 SW	4 S									30
31										0 SSW		1 W	2 NW	4 NNW			4 NNW								31

/06/43-HP(1)

MO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD [illegible]GREES AT 10M
WS [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																2 NNW								
2																								
3																								
4															2 NW	1 NNW								
5															4 SSW									
6											5 WSW				3 N									
7													2 NNW		4 W	5 WNW	4 WNW							
8										4 SSW	5 SW	6 SW		6 SW	5 SW	5 SW	4 SW							
9									4 SSW									5 SW						
10								3 W																
11												5 SSW	4 SW	4 SW	4 SW	4 SW		5 SW	3 S					
12																	2 SW							
13														3 SW	4 SSW									
14														4 SW	4 SW	5 SW								
15												1 WNW	0 NNW											
16													1 WSW		4 S	3 SSW	3 SW							
17														2 SW	2 WSW									
18													2 WSW			2 SSW	3 SSW							
19											3 SSW													
20										5 NW	3 NNW	1 NNW	0 N	2 N		0 ENE		0 SSE						
21										1 NNW														
22											1 N	1 NNE					2 N							
23																	4 SW							
24													6 SW	6 SSW	6 SW									
25													5 SSW											
26															5 SSW									
27																								
28															4 SW	3 SSW	3 SW							

HC IND SPEED AND #IND DIRECTION FOR STAbILITY CLASS C
WD .GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											3 SSW		1 NNW	3 NE	2 ENE		2 WNW							
2															5 SSW									
3														1 NE	2 NNW		4 N							
4																3 NNW	2 NNW							
5									2 ESE	3 S		4 SW												
6												2 WNW	3 WNW											
7																								
8																								
9																								
10																								
11																								
12														1 NNW										
13													2 SW			3 SW								
14											1 NW			4 N			4 N							
15															2 W	3 WSW	3 SW							
16											6 SSW	6 SSW	6 SSW	6 SSW	5 SSW									
17								3 W			4 NW	3 NW		3 NNW	2 NW		2 NNW							
18										1 WNW	1 NW		1 NW		0 N	0 N	0 NNE							
19										4 SSW	5 SSW	4 SSW		5 SSW		4 SW								
20												6 SSW		6 S	6 SSW									
21												3 NNW	3 NNW	4 NNW	3 NE	2 NE	0 ENE							
22																3 ESE								
23											1 N		1 NW		2 SE	3 SE								
24													4 NNW	3 N		4 NNW								
25										4 SSE	3 S					5 SSW								
26										5 S														4 SSW
27														5 SSW	5 SSW									
28										4 NW		5 NNW												
29																5 SW	5 SW	5 SSW						
30										3 NNW														
31																								

1/06/H3-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3										5 NW						3 NNW								
4																								
5																								
6															5 SW		6 SW							
7												5 W				2 N	2 NNW							
8									2 S															
9									6 SSW															
10									4 SSW		5 SW	6 SW					6 SW							
11									5 SW	5 SW	5 SW													
12											5 SSW			5 SW	6 SW	5 SW	4 SW							
13														2 NNW	1 NNW	1 NNW								
14														2 SW										
15									4 SSW				6 SW				5 WSW	4 WNW						
16										4 SW														
17									2 WSW									3 SW						
18											3 E		3 NNW											
19									4 S															
20																6 SW	6 SW	6 WSW						
21										6 W	5 WSW	6 WSW	5 WSW	5 WSW				6 W						
22																		2 NW						
23																								
24									2 SW	1 W		1 NNW				2 NW	2 NW							
25												6 SW					5 WSW							
26										6 SW														
27													5 WSW		5 SSW	5 SW								
28									1 NW	2 NNW														
29									1 NNW			1 N	1 N					4 NW						
30									1 NW	2 N	3 NNE				3 N		3 NNE							

1/06/83-RPI)

HC 'IND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
dC GREES AT 10M
WS .PS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3														6 NW										
4																								
5														6 SW										
6																					5 NW			
7																5 WSW		4 WSW						
8										6 NNW		5 NNW				4 NW	3 W							
9													1 NW							0 N				
10													2 WNW											
11							5 NW	3 NW											4 N					
12											4 WNW		5 NW			5 N			3 NE					
13									0 N															
14													6 SSW	6 SSW										
15																								
16														3 SW					0 NNE					
17						2 W														4 NW			2 WNW	
18								1 WSW						1 SE										
19																								
20																								
21																								
22																								
23																								
24																								
25													2 ESE											
26															6 SW	5 SW								
27										2 SW								4 WNW	6 NNW	3 NW	1 NNE			
28																								
29																								
30																								
31											2 SSE													

/06/83-HP[]

MC WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WI GREES AT 10M
WS PS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																		3 SSW						
4																								
5																								
6									4 SW								5 SW							
7											6 SW													
8										6 WSW							6 SW							
9																5 NNW		4 NNW		3 NE				
10																					3 NE			
11									1 NNW			2 NW					5 SW							
12																								
13																			4 NW			3 N	4 N	
14									3 NW		3 NNW						4 NW	4 WNW						
15											3 NNW													
16									1 SW															
17											5 W													
18																								
19										3 WNW					6 SW	5 WSW	5 SW							
20															6 SW	5 WSW	6 WSW							
21																								
22									1 ENE															
23											5 SW													
24										1 NNW			3 N											
25																								
26																								
27																		5 NW						
28												3 SSW												
29																								
30																								

/06/83-HPI)

H WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
W EGREES AT 10M
WS PS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											3 W													
2																	6 NNW							
3											1 NNW													
4																								
5																								
6														4 SW				3 SW		6 NW				
7																								
8																								
9										3 WSW														
10																								
11									2 SW															
12																								
13															0 S									
14																								
15																								
16																								
17																								
18																								
19																								
20													6 WSW											
21											5 SW					4 W	5 WSW	6 SW						
22											4 SSW			4 WNW			4 NW							
23											4 SSW					5 NW								
24																5 NNW		4 ENE						
25									2 SE			5 SSW	5 SW	6 SW										
26													6 SSW	6 SW		6 NNW								
27																				1 NNE				
28																								
29																								
30										4 SSW			5 WSW		6 WSW		5 WSW	5 SW						
31																								

/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB[illegible] CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4									5 SSW							4 SSW		4 SW						
5																		4 WSW						
6								1 NNW	1 NW				3 S	3 SSW			2 SW							
7															4 NNW	3 NNW								
8									1 NW									4 NNE						
9																								
10									3 WNW			2 N	3 NW					4 NE						
11										1 NW	1 NW													
12																2 N								
13																								
14																								
15													4 W											
16																								
17											2 NNW				5 SSW									
19													4 NNE											
20																	3 WSW	4 WSW						
21													4 W											
22																3 SW								
23																								
24																								
25																								
26																								
27																								
28																								
29																		3 SW						
30																								
31																								

(01/06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD = DEGREES AT 10M
WS = MPH AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1												5 SW	5 SSW					4 WSW						
2														6 SW		6 SW				4 NE		3 NE		
3													3 SW		4 SW									
4												5 SW						4 SW						
5																4 WSW								
6																	1 SSW							
7															4 NNW									
8													2 WSW					3 ENE	1 NW					
9																								
10																								
11																								
12																	2 SW							
13																								
14																								
15																								
16		1 SW																4 N					1 SW	
17																								
18																								
19																								
20																		6 NW						
21																								
22																6 SW								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																	3 N							

/06/83-RP()

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB' ' CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8				5 SSW																				
9																								
10																								5
11			5 SSW													1 ESE								S
12																							0 SSE	
13												6 SW												
14														4 SW										
15																								
16														5 SW		5 SW	4 SW							
17																		0 N						
18																								
19																	3 WSW							
20																	4 SW							
21																								
22																	1 N		1 SSW					
23																								
24																								
25			1 NW	0 NW																				
26																3 SW								
27												5 SW												
28																								
29															3 SW									
30																								
31																								

(01/06/83-HP1)

II-146

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS C
WD [illegible]GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3													1 NW											
4																								
5												3 SW												
6												4 SW	4 SW		2 WSW									
7										1 N						3 N								
8																								
9												1 N												
10											1 WSW		2 WSW	3 WSW										
11														1 NNW	2 NNW									
12											4 SW					5 SSW								
13													6 SW		5 SW	4 SW								
14												6 SW	5 SW	6 SW	5 SW									
15											4 SSW			6 SW		4 SSW								
16										4 S	2 SE		6 SSW	5 SSW										
17																								
18																								
19																								
20											3 SSW													
21											6 SSW	6 SW	6 SSW		5 SW									
22											5 SSW			5 SW										
23																								
24											4 NW	4 NW	4 NNW	4 N		4 NNW	3 NNW							
25															3 WSW									
26																								
27													2 WNW	2 NW	1 WNW	2 NW								
28												3 WNW												
29																								
30																								

/06/83-RP()

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB' 'Y CLASS C
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											4 SSW		4 SSW		5 SSW	5 SSW								
2										5 SSW	6 SSW	6 SSW												
3																								
4																								
5																								
6											4 SSW		4 SW											
7																								
8												3 WSW	3 SW											
9											3 S		5 SW											
10														4 SW	5 SW									
11																								
12										3 SSW					4 SW									
13																								
14													5 SSW		4 SW									
15																								
16													2 NW											
17																								
18																								
19																								
20																								
21																								
22															3 NNW				3 NNE					
23												1 N	1 N			2 NW								
24																								
25												4 SW	4 WSW	5 SW		4 SW								
26											4 SW	5 SSW	5 SSW	5 SW	4 SSW	4 SSW	3 SSW			3 SSW				
27																								
28													4 W		4 SSW	4 S								
29																								
30																								
31																	1 SE							

(01/06/83-RPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD[illegible]GREES AT 10M
WS [illegible]PS AT 10M

C8-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1											0			2	1	1								
											NNW			NNW	N	SW								
2										2						1	2							
										SSW						SSE	SSE							
3	0										1						2							
	SE										N						SW							
4										1	0						2	2	4	2	1	1	0	
										ENE	WSW						SW	W	WSW	W	W	SE	SSE	
5	1		1	2	3		4	4	4	3	3						2	1	0	1	1		0	1
	W		NW	NW	NW		NW	NW	NNW	NW	NW						NW	N	NE	NW	WNW		WNW	WSW
6	0	1	1	1								1	0	1	1	0	1							
	W	WSW	WSW	S								NNW	NW	NNW	WNW	W	W							
7														1	1	2	2							
														WNW	NW	WNW	W							
8													0	0	0	0								
													NNE	NNE	NNE	N								
9											0	1	1	2	3	3	2							
											NW	N	N	NNW	WNW	WNW	NW							
10											1	1	1	1		2	2							
											NE	WNW	NW	NNW		NNW	WNW							
11											1			1	1	1	2							
											NE			N	NW	NW	WNW							
12												1		2	2	2	1							
												N		WNW	WNW	WNW	WNW							
13											1			2		3	3							
											NW			WNW		NW	NNW							
14																	3							
																	SSW							
15											2		1	0	0	0								
											SW		SSW	SSW	NNE	NNE								
16																		1		1			0	
																		WSW		SW			ESE	
17										1		1					1							
										E		NNE					E							
18																	3	2						
																	NW	NW						
19													1				1	1						
													NNW				N	ESE						
20										2					4		3							
										WNW					N		NNW							
21										0			1			2	2							
										NNE			NW			NNW	NW							
22											0	1				2	2							
											NNW	NNW				WNW	WNW							
23										1	2			3		3	2	1						
										ENE	WSW			SSW		SSW	SSW	SSE						
24			6								7	7	8	8			2	2	3	1	0	1		1
			SSW								WSW	SW	SW	SW			W	W	W	WSW	N	NW		S
25									0								2	1	1					
									WSW								N	NE	SSE					
26																		4	1	2	1		0	
																		S	S	SSW	SSW		SSE	
27		0	0	0	1				2								4	2	1	1	1	2	2	2
		S	S	SSE	SE				SSW								SSW	SSW	S	SSE	S	SW	SW	SSW
28	3	2	2	4	4	1	1	2	5				7		6		4			5	6	5	4	2
	SSW	S	S	SSW	S	S	SSW	S	SSW				SSW		SSW		S			SSE	S	S	SSW	SSE
29	3	1	0	0	2	1		1	1	3								1	1	1	4	3	6	7
	S	SSE	SE	ESE	W	W		W	S	SW								SSE	SE	ESE	S	SSE	S	S
30			4				6	9	5	7	7	8					5	4	4		3		2	1
			ESE				S	S	S	S	SSW	SSW					S	SSW	SSW		S		SSW	W
31	2	1						1	1						4	5		3	3	1	1		2	2
	WSW	SW						S	SSW						NNW	NNW		NNW	NNW	WSW	SW		WSW	W

/06/83-HPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 WNW	2 NW	2 WNW		1 W	2 WNW	3 W	3 W	2 W	2 NW	4 NNW	6 NNW			3 N		1 N	1 NNW						
2												1 SSW	1 SW	1 SSW	2 SW		4 SW							
3												0 WNW	1 WSW	3 W	2 SW	1 SW	0 W	2 W						
4						0 SE				0 NW	0 N	1 NNW	1 NNW	2 NW			2 NW	2 NW						
5											1 NNE	1 N	1 NNE	3 SW			3 SW	2 SSW						
6										1 SW				5 NW		1 NNW	5 WNW	3 NNW						
7											1 N	2 NNE						2 W						
8									4 SSW				7 SW					4 SW						
9		3 SW	5 SW	6 SW	7 SW	4 SSW	4 SW	4 SW								6 SW	6 SW		6 SW	5 SW	6 SW	4 SW	5 WSW	6 WSW
10	7 W	7 W				3 WNW	4 WNW											1 E						
11					2 S				1 SSE	5 SSW	6 SSW									1 S	2 SSW	1 SE	3 SSW	4 SW
12	2 SSW								0 SE	0 SSW	1 WSW	1 S	2 SW	2 SW	2 SSW	2 SSW		3 SSW						
13										1 ENE	0 NW	1 SW	2 SSW				4 SSW	2 S	1 SE					
14									1 SE	1 SW	1 W	2 SW					5 SW	4 SW						
15		2 NNW	1 E	2 SE					0 SSE	0 W	0 SW			1 E	1 ENE	0 WSW	2 SW	2 W						
16										1 ENE	1 S							3 SW						
17											2 SE	0 SE				2 WNW	1 N	2 N						
18										0 SE	1 N	0 NW												
19										2 S							1 SW	0 SE	0 SE	0 S	6 SSW	8 SSW	7 S	8 S
20	8 S	8 SSW	7 SSW	6 SSW				6 WNW	6 WNW								1 SE		1 NNW	2 NNE	3 N	3 NNW	3 NNW	
21			0 NW	0 W	0 SW	1 W		0 NW	1 N									2 NNW	0 W					
22									1 E	1 NE				0 ENE				1 NW						
23										1 SW								3 SSW						
24												6 SSW				7 SW	6 SW	4 SSW				5 SSW		
25									4 S		6 SSW	6 S		7 SSW	7 SW	6 SSW	7 SSW	5 SSW	6 S	5 S				
26					4 SSW	7 SSW	8 SSW	7 S	6 S	5 SSE	6 S	8 S	7 S	7 S				3 WSW		4 SSW	5 SSW	4 SSW	4 SSW	5 SSW
27	5 SW	5 SW	4 SW	2 SSW	0 E	1 S			1 E	1 NNE	1 NNW	1 NNE	1 NE	1 NNE	1 NNE	0 E	2 S	2 S						
28									1 SE	1 WSW								2 SW						

/06/83-RPI)

HOUR AND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										3 SW								2 S						
2										2 SSE						4 WSW	2 SW	2 SSE	2 SSE		1 S	1 S		
3										0 SSW	0 NNW	1 N	1 NE			3 N		3 NNE	2 NNE	2 NNE	1 NNE	2 NE	1 NW	3 WNW
4	4 NW	4 NW	4 NW	4 NW	4 NW	4 NW	4 WNW	4 WNW	4 NNW									2 NNW						
5																	1 S	1 W						
6										0 S											1 NE			
7		0 SE							0 ENE	1 N	2 NW	3 NNW	3 NW	3 NNW	3 NNW	2 NNW	2 NW	1 WNW	0 SSW					
8												0 NW	2 NW	2 NNW	2 NNW	2 NNW	2 NNW	2 NNW	2 WSW		1 SE			
9											1 NNW	1 NNW	1 N	1 NNW	1 W	2 WNW	4 NW	2 NW						
10									1 WNW	2 NW	2 NW	2 NW	1 NNW	1 N	2 NNE	2 N	2 NNE	3 NE						
11									1 NW	1 WNW	0 NNW	0 NNE	0 SE	2 NW	2 NNW	2 NW	2 WNW	1 NNW					2 S	2 S
12	1 S	1 S	1 SSW	1 SW		0 SSW		1 SSE	0 SSW		2 SSE	1 SSW	1 SE		1 WSW	2 ESE	1 N 2 S	0 N	1 S					
13																								
14									0 WNW	1 NNW						3 N		3 NNW						
15									1 ENE	0 N	1 N	1 N		0 SSW				3 SW						
16									2 SSW							5 SSW	4 SW	5 SW	4 W	1 WSW	3 SW	5 SSW		
17		4 WNW	5 W	4 W	3 WNW	3 NW	2 WNW		4 WNW	4 NW			3 NW			2 N		0 N	0 SW					
18	0 SW	0 SW	1 SW	1 SW	1 SW	1 SW			1 NW			0 NW		1 NNE				2 SSW	1 SSW					
19									1 SE								8 SW	5 SSW	5 SSW	3 SSW	1 SSE	1 SSE	2 SSE	2 SSE
20	1 S	2 S							7 SSW				6 SSW				4 SSW	3 SW	4 W					
21	3 WNW	2 W	2 WSW	2 WSW	1 WSW	1 WNW	2 WNW	2 WNW	3 WNW	4 WNW	3 NNW							1 NE	0 SSE					
22									1 E	1 E	2 NE	1 NE	0 ENE	0 N	2 E		2 SW	3 SSW						
23								2 SE	1 ESE	1 NE							2 ESE	2 ESE						
24				2 WNW	0 S				1 S		5 NNW	4 NNW			3 N		1 E	1 NNW	1 SW					
25									3 SE								4 SW	2 SSW	1 SSE	2 SSE		1 SE		
26		6 S						4 SSE	4 S		7 S	6 S	8 S	10 SSW	10 S	7 S	7 S	8 S	8 S	7 S	6 SSE		7 SW	
27	2 SW		2 SSW	2 S	4 SSW	6 S	4 SSE	6 S	7 S	8 S	7 S	7 S	6 S						2 SSW					
28	0 SSW		0 E	1 SE	1 SSE	1 SSW	1 WSW	2 W	2 WNW		6 NNW		5 NNW	7 NNW	5 N	5 NNW	5 NNW	4 NNW	5 NNW	3 NNW	2 NW			
29								0 SE	0 S	3 SW	4 SSW	4 SW							4 S			6 S	5 S	
30			5 S	5 SSW	4 SSW				3 WSW		3 NNW	2 NE	1 ENE				3 NE	1 ENE	2 SSE					
31									3 SSW	4 SSW	4 SW	4 SSW	4 SW	4 SW	4 SW	4 SSW	4 SSW	3 SSW						

/06/83-HPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1					7	5	8	8	4	6	6	7	6	6	7	6	5	4						
					S	S	S	S	S	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW						
2		5	6	5	5	5		4	5	7	6	6	8	8	8	6	5	3		5		7	4	4
		S	SSW	S	SSW	SSW		S	SSW	SSW	SSW	SW	SSW	SSW	SSW	SW	SW	WSW		SW		SW	WSW	WSW
3	3	5	4	1	3	4	3	3			5	4	3	3	3		3	2	2	1	0	1	0	
	SSW	SW	SW	WSW	SSW	SW	SW	WSW			NNW	NNW	N	N	NNW		NNW	NNW	NNW	N	WNW	WNW	SW	
4					2	1	1	3	2	3	5			3	4		3	0	0	0				
					W	WNW	NW	WNW	W	WNW	NW			NNW	NW		NNE	SE	NE	ENE				
5									3	4	3				3	3	4	4						
									S	SSE	SSE				S	S	SW	SW						
6						2	2	3	6	8	7	7	7	7		6		5						
						SE	ESE	S	SSW	SSW	SW	SW	SW	SW		SW		SW						
7									0	3	4							1		1	1			1
									SSE	SW	WSW							SSE		NW	WSW			W
8	2	3	2	1	0	1	2	1										4	4					
	W	NW	W	SSW	W	W	WSW	S										WSW	SW					
9						6	5	6		7	7	6	7	7	6	7	6	5						
						S	S	SSW		SSW	SSW	SSW	SW	SW	SW	SW	SW	SW						
10				6									7	8	7	6		6						
				S									SSW	SW	SW	SW		SSW						
11								5				7	7	7	8	8	8	7						
								SW				SSW	SW	SW	SW	SW	SW	SW						
12								5				6	7					4						
								SSW				SW	SW					SW						
13								2		2							1	0						
								SW		NNW							NW	N						
14								0	1	1	2				2		4						5	4
								NNE	NW	NNW	NNW				SW		NNE						SSW	SSW
15	1		2	2	2	5	5	4						6	8	6			3	2				
	SSE		SSW	SSW	S	S	S	SSW						SW	SW	SW			W	S				
16									4					6	7		2	1						
									SSW					WSW	WSW		NW	ENE						
17																								
18								0	1	2		1		3		1	1	3	6	3	4	4	2	2
								E	N	NNE		NNE		N		SE	N	WSW	SSW	S	SSW	SW	SSW	SSW
19	2	2	1	2	2	1	3	3		8	8	7	7	7	7	7	7		3					
	SE	SSE	ESE	ESE	ESE	SE	S	SE		S	S	S	SSW	SW	SSW	SSW	SW		SW					
20									6	8	7	6	7	7	6				5					
									SSW	SSW	SSW	SSW	SSW	SW	SW				SW					
21								3							7	6			5	1	2	2	2	0
								SW							WNW	WNW			W	NW	NE	NE	NE	S
22									1										2					
									NNE										NE					
23								1	1	1								1						
								NE	ESE	NNE								N						
24																		2	4					
																		W	W					
25								1	3				6	7	7	6		4	4					
								ESE	SSW				SW	SW	SW	WSW		SW	SW					
26								4			6	7	8	8	7	6	7	6						
								S			SW	SW	SW	SSW	SW	SSW	SW	SW						
27								1	1	1				6				5	5	5	4	2	2	3
								ENE	ENE	ENE				SW				NW	NW	NW	NNW	N	N	N
28							2											3	2					
							W											N	NNW					
29								1		1				1					3					
								WNW		NNE				NNE					NNW					
30								1										3						
								WNW										NNE						

/06/83-HPI)

HOU WI ND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1								1 ENE	1 N															
2														8 SW	8 SW	7 SSW		7 SSW	4 WSW	0 ENE	2 N	2 SE		
3								2 NNW	2 NW	0 W	1 ESE		3 NNW											
4											1 NE				2 N	2 N		1 N	2 N	1 NE				
5										1 SE		5 SSW			5 SSW	3 SSE	4 S	6 S	7 S	9 S	7 SSE	2 SSW	4 WSW	1 ESE
6	4 SE				1 S				3 SSW	6 SSW	8 SSW	6 SSW	6 SW	7 SW	7 SW	6 SW	5 SSW	4 NNW	2 NNW	4 NNW		5 NW	1 NNW	1 NNW
7	2 WNW	2 WNW							3 NW	4 NW	4 WNW		2 NNW						3 SW					2 SW
8	1 SSW								3 NNW				5 NNW		2 WNW				0 NNW	3 N	3 NW	2 W	1 N	1 N
9	3 NNW	3 NW	2 WNW	3 NW	2 NW	2 NNW	2 WNW	1 WNW	2 NNW					2 NW	1 NNE		1 NNW	1 N	1 NNE			1 SW	1 SW	
10														2 WNW	0 WNW		4 SW	4 SSW				5 S	6 S	6 S
11	8 S	6 S				6 WNW								7 SW	4 SW	2 SSW		6 W			1 SSE			
12												7 WNW			4 WNW		5 NNE	4 NNE		1 SSE				
13								0 SSW			1 NNW	1 NNW				2 N	2 N	2 NNW	2 NNW	0 ENE				
14								2 SSW	3 SW		5 SW				6 SW	7 SW	8 SW	6 SW						
15				5 S			6 S	7 S	6 SSW	7 SSW	7 SSW	7 SSW	7 S		3 S		7 SW	2 SW	4 SSW	6 SW	4 SSW	4 S	4 S	4 SSW
16							2 S	3 SSW	3 SW									4 NNW		1 S	2 S			
17					2 WNW		0 SW	1 SW	2 W	3 W	2 NW	3 NNW	2 NNW	2 NW	3 NNW	4 NW		2 WNW	2 NW		3 NW	3 WNW		2 WNW
18	2 NW	2 WNW	2 WNW	2 NW	1 NNE	1 NE	0 WNW		1 WSW	1 NW	1 NNW	1 NNW	1 NNE				2 S	1 SSW						
19																								
20	2 S	7 SSE	6 SE					8 S	9 SSW	9 S	8 SSW	6 SSW	5 SSW	6 S	7 SSE	5 SW	4 SW	5 SW	4 SW	6 SSW	5 S		5 S	
21						5 S		8 SSW	8 SSW		8 SW	9 SW	10 SW	8 SW	8 SW	9 SW	8 SW	7 SW	4 SW					
22							3 SW						2 NNW		4 NW	3 WNW	1 N		2 NE				1 NNE	1 NNE
23	0 SE				1 W	0 W	1 NW	1 NNW		1 NNW	1 ENE					3 NNE			3 NNE					
24									0 ESE	2 SW	3 SE	3 SSW	2 SE	1 WSW	1 NW	1 ESE								
25									2 SW	4 SW	4 NW	1 N			2 SW		2 SE	1 NE	2 E					
26								1 ESE			4 SW		5 SW	6 SW			4 WSW	4 SW	4 WSW	5 SW	4 SW		3 SW	3 SSW
27		2 S					1 S	4 SW	4 SW													1 S		
28											1 NNW													
29														3 N	4 N	4 NNE	1 E			2 ENE				
30										0 NW					1 NW		2 W	2 NW	4 NW	2 W				
31									3 S						4 SSE	4 SSE	4 SSE	4 SSW						

/06/83-RP1)

H[illegible] WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
W[illegible] EGREES AT 10M
WS[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3															2 NNW	4 NNW	2 W					0 SW		1 SE
4	1 NW	1 W	1 W	1 SW									1 N	2 NW	2 NNW					1 ENE				
5									2 N						2 NW			2 N		2 NE				
6																		5 SW						
7	1 NE								6 SW	6 SW		7 SW	6 SW	7 SW	8 WSW	7 WSW	6 WSW	5 WSW						
8								5 SW	5 SW		6 SW	6 SW	7 SW	6 SW	7 WSW	6 SW		6 SW	6 SW					
9		6 SSW	6 SSW					2 NW		3 NW		4 NW		5 NW	5 NW		4 NW		3 NNE					
10								1 E					7 SW	8 SW	7 SW	6 SW	7 SW	5 W	4 NW	4 N		3 NW	3 W	3 W
11	2 W							1 N			2 NNW							6 WSW	4 SW				6 SSW	6 SSW
12	5 SSW							6 SSW	6 SSW	6 SSW	8 SSW	7 SW	7 SW	8 SW	8 SSW	8 SW	7 SW	7 SW	6 SW	5 SW				
13						4 WNW	4 NW	4 NW	2 NW			2 N		10 WSW	10 SW	8 WSW	9 WSW	7 W			4 N			3 N
14	2 N	1 NNW						3 NW		3 NNW				4 WNW		3 NW				2 N	1 NNE		1 SW	2 SW
15								1 NNE	1 N						3 N			3 NW	4 NW	2 NW	1 SW			
16								1 NE							6 SW	6 SW	7 SW	7 SW	6 SW	5 SSW	5 SSW	6 SSW	7 SSW	8 SSW
17	9 SSW	9 SSW	8 SSW	6 SW				2 NW				6 WNW		6 WNW	6 WNW	7 WNW	6 WNW	6 WNW	5 NW	5 NW	3 NW	2 NNW		
18										0 NE				4 WNW				4 SW	0 NW					
19											4 WNW	6 WNW	7 WNW					6 SW	5 WNW	4 NW				
20										4 W		5 WNW						6 N	5 WNW	3 WNW				
21				1 SSW					1 NNW	3 NW	4 WNW	6 WNW	7 WNW	7 WNW	6 WNW	7 WNW	6 WNW	7 WNW	6 NW	5 NW				
22								1 E			1 NE					4 NW	4 NW	2 N	1 N					
23										6 SW		4 WSW		6 WNW	3 W	2 NNW	4 NNW	5 NW	3 NNW					
24									1 NW		1 NW			3 N				4 NNW	4 NNW					
25									2 WNW	1 NNW	1 N			3 SW	0 ESE	2 NNE			4 ENE					
26							4 S	3 SSW	4 S	4 SSW							4 NNE	0 SSE	6 S				6 SE	
27										4 SSW							4 NNW			1 ESE		5 SSW		
28															0 SSW		3 NE		5 S					
29																								
30																								

/06/83-HPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD [illegible]REES AT 10M
WS [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										2		3	4		3	3				1	1			
										SW		NNW	NW		NNW	WNW				WSW	WSW			
2	0	1	1	1	1	1		1			2			2	5	6		3		2	0			
	SW	SW	W	W	WSW	WSW		NNW			N			NW	W	NW		NNW		NE	NE			
3								0	2	1			2	2		5	4	0		2	2			
								NW	NW	NNW			NW	W		WSW	SW	WNW		NE	E			
4										2	3		3			3	2	1		2				
										NNW	N		N			NNW	N	NNW		ENE				
5										2							2							
										ENE							SE							
6								1			5	5			4	4	4				2			
								SE			SW	SW			SW	SW	SW				NW			
7																								
8													2	2		2	3	3	4	6	5	4		
													NW	NNW		NNW	NW	N	SE	SE	SSE	SSE		
9							2	2	2			1	1		2	1			2	3				
							SE	SSW	SW			NNW	NE		S	W			SSE	SSE				
10								1	3	4	4			4	2	5		2		3	2			
								SSW	SSW	SW	SSW			SW	SW	NW		SE		WNW	WSW			
11								0		2			3				2	0	0	3				
								SW		WNW			NNW				NW	N	N	SW				
12								1	2		4		1			3	1	2	0	2				
								ESE	S		S		SE			SW	NW	NNW	N	NNW				
13									2	3	4	4	3	1					3					
									S	SSW	SW	SSW	SSW	SSW					SSW					
14								1					1		1	1		1	0	2				
								ESE					NNW		SSE	E		NNW	SW	WSW				
15									1			3	3	3	2	2			2					
									N			NNW	NW	N	N	N			NNE					
16								2	4	4	2	3	3	2	0		4	5	4	3				
								SE	SSE	SE	S	S	S	SSE	S		ESE	SE	SE	ESE				
17										2	2		3				3	2						
										SSE	ESE		SSE				SSE	SSE						
18									0	1	1			4	6				2			5		
									SSW	S	W			SSW	S				SW			N		
19								3	3	1		6	8	8	6	4		4	4					0
								SE	SW	S		WNW	WNW	WNW	NW	NW		WNW	WNW					SSE
20										1				8	7	7	6	6	4					
										SW				WSW	SW	SW	SW	SW	SW					
21									3															
									SW															
22									4						6	5		4	4	1				1
									SW						NW	NNW		NW	NW	W				SSW
23									3	4								1	3	5				
									SSW	SSW								NW	SW	SE				
24								2	4	4					4		4			0	4			
								SSW	SSW	SW					WNW		NNE			WNW	ESE			
25	5	7			1			1		3	4				6	6	7	3						
	S	SSE			SSE			ESE		SSE	S				SW	SW	SSW	WSW						
26								3	6	8	7	7						0	1	2				
								SE	S	SSW	SSW	SW						WSW	WSW	SE				
27								0	1	2	2	3	3	3	4	4	4		2					
								NNW	WNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW		N					
28									0	4	6	6	5	5	6	4	3	4	4					
									WNW	WNW	WNW	NW	NW	NW	NW	WNW	W	WNW	WSW					
29									2	1	1	2	1	4				1						
									ENE	NW	SSW	E	S	SSE				SSE						
30								1	1					6					3					
								ESE	SSW					SW					WSW					
31																								

/06/83-HPI)

II-153

HOURLY WIND SPEED AND WIND DIRECTION FOR ST[illegible] CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

C6-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																			4					
																			WSW					
2								4											3					
								SSW											SW					
3									1	1								4	3					
									N	N								SW	SW					
4							1										4	4						
							WSW										N	NNE						
5																			4					
																			NE					
6								1										2					7	
								NW										N					NNE	
7	0							1								6	5		4				4	3
	ESE							NNW								NNE	NNE		NE				WNW	WNW
8	1							1						2	1	2	2	2						
	WSW							W						W	S	SE	E	ESE						
9								0	0			0		1	1	0	1	1	1					
								SW	NNW			N		SW	SSW	SSE	N	NNW	WNW					
10									0	1	1			2	3									
									ENE	NNE	SE			WNW	WNW									
11												4	5		4	2	2	2	4	1				
												SW	S		SW	NNW	N	NW	NW	NNW				
12										3							2	0						
										SW							NW	SW						
13										3	2			3			5	4	1					
										SSW	S			WSW			ESE	SE	SSW					
14											2	2		3		4	7	5	4					
											NW	NW		NNW		NNW	NNW	N	E					
15														3				4	4	2				
														NNW				N	NE	ENE				
16												3				2	1	0						
												NNW				S	ENE	SSE						
17										0	1					4	3	3	2					
										ENE	WNW					WNW	WNW	SSW	SW					
18										1			1	1	2	4			4					
										NW			W	W	WSW	SW			SW					
19									4	8		4		5		1		2						
									NNW	NW		NW		S		NE		SW						
20									1															
									ESE								3	3	3					
21									1			3		1	6	6	5	1	1	1				
									SSW			WNW		WSW	SSW	S	S	S	W	SW				
22														3		3	2							
														E		SE	ESE							
23												2		3	1	3	4							
												NNW		WSW	WNW	WSW	NNE							
24											3	3	3		2	3	2	4	6	4				
											NNW	NNW	NNW		NNW	NW	NNW	ENE	ESE	SSE				
25														2		4	4	3						
														N		S	SSW	S						
26												1		5	5	3	1						4	
												NW		SSW	SW	WSW	WSW						SSW	
27								2	3	4	5	5	4	2		3	2	1						
								S	SSW	SW	SW	SW	SW	NNE		WSW	NNW	N						
28				5	7	7				5	6	7	8	8	6	6	10					5		
				SE	SSE	SSE				SSE	S	SSW	SW	SSW	SW	SW	WSW					SSE		
29											5	4		4	4	4	4	7	7					
											SW	SSW		W	WNW	WSW	SW	SW						
30																								
31																								

(01/06/83-RP1)

II-1-5

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD [illegible]IN REES AT 10M
WS [illegible] AT 10M

C8-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										4 SW														
2									5 SW		4 SW				6 SW						3 ENE			
3									4 SSE	3 SSW	4 S							1 NNW						
4										4 SW	5 SSW										7 SSW	8 SSW	7 SSW	4 S
5				2 S	0 WSW	1 SSE	1 S	1 SSW	4 SSW	5 SSW	4 SSW	4 SSW	4 SW	4 SSW			4 WNW	2 NW	0 NW	2 NNW	2 NW	1 NNW	1 WSW	1 WNW
6	1 WNW	0 N	1 NW	2 NW	1 NNW		1 WNW	2 NW	2 WNW	2 WNW	1 WSW	0 NNE		2 WNW		1 NW		2 SE				1 S		
7	2 W	2 W	2 W	2 WNW	1 WNW	1 WNW	1 W	0 SW	0 SW	0 NW		1 NNW				3 SW	2 WSW							
8															2 W	2 NW	3 N							
9									0 WNW				1 S	2 WNW		3 ENE						3 SE		
10											2 NNW				2 WSW	4 S								
11																		2 W						
12										1 SW		2 SSW	2 SSW	2 S										
13														1 ENE	6 SE									
14												1 ENE		1 NNW										
15													1 NNE				3 NNW	2 NNE	2 NNE					
16										1 WNW		2 NW				4 N			2 NNE					
17	0 WSW					1 SW										3 N	4 NE	4 NE						
18																	1 NNW	2 NNW						
19												3 SSW	2 W											
20															1 SW	4 W	4 WSW		2 ESE					
21	1 WSW											4 WSW	4 SW	4 SW	4 W	4 NW								
22									6 SSW	6 SSW		5 SW	7 SW	7 SW	6 SW		5 SW	4 SW						
23											1 NE	1 WNW			3 SW	4 WSW	4 WSW	4 SW		3 SSW				4 S
24														1 NE										
25							6 S	8 S	9 SSW	8 SSW	8 SW	8 WSW	8 SW	8 SW	8 SW	8 SW	7 WSW	3 WNW	0 NE					
26													5 WNW	6 WNW	6 NW		2 W	4 WSW						
27																	5 SW	3 SW						
28				5 S						7 SSW	8 SW	8 SW	8 SW	9 SW	8 SW	7 SW	6 SW	4 SW						
29					4 WSW	4 SSW	5 S		6 SSW	6 SSW	6 SW	8 SW	8 SW	6 SW	6 SW	5 SW	5 SW	3 WSW						
30						3 WNW	4 WNW	3 WNW	2 NW	3 NNE				1 WNW		3 N				0 NW				

(06/83-HPI)

HOURLY WIND SPEED AND WIND DIRECTION FOR ST[illegible] Y CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-THACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 SW												1 WNW	3 SW		3 WSW	3 WSW	3 WSW			1 SSW		1 SSE	
2					2 SSW	2 S	3 SSW			2 SE	4 S	6 SSW	6 S	4 SSW		2 WSW	1 SW	1 SSW					1 SE	1 S
3			2 SW	1 WSW	1 S	2 SW	1 S	1 ESE	1 SW	4 SW	5 SSW	5 SW	8 SW	7 SW	8 SSW	8 SSW	7 SSW	6 SSW	5 SSW	1 SSW	3 SSW	1 S	3 S	4 S
4	4 SSW		3 S	2 SSW	0 SSE	2 SSW	0 SSW	1 SE			3 NW				3 W	1 NE	3 ESE	2 ENE	3 NNW	0 SW	1 W	2 NW	2 NW	1 SE
5							2 SW			4 SW			3 WNW	2 NW	3 WNW	0 NW	2 ESE							
6													4 SW											
7			4 S						6 S		5 SSW	7 SSW	7 SW	7 SSW	6 SSW	7 SSW	7 SSW	4 S	4 SSW		7 S	8 S		
8	4 S	5 SW	7 SSW				2 N	1 NW		3 WSW	4 WNW	1 SE		1 SW		2 N	0 WNW	0 W	2 NW	2 W	1 W	2 W	1 W	1 W
9	0 SW	1 SW	1 WSW				1 SW				0 WNW			3 SW	2 WSW	2 WNW	2 SW							
10										5 SSW	4 SSW	6 SSW	7 S		5 SSW	6 SSW	5 SSW	3 SSW	3 SSW	3 S			4 S	
11	4 SSW	4 SSW		8 S	9 S	9 S	11 S	11 S	9 S	11 S	11 SSW	8 SSW	7 SSW	3 SW	4 WNW		2 E					6 SW	1 WNW	
12											6 SSW	6 SW	4 SW	5 SSW	5 SSW	4 SSW	4 S	4 S	4 SSE		2 NW	1 NNW		1 ESE
13	1 SSE									5 SSW	7 SSW		5 SSW	6 SSW	4 SSW	4 SW	3 SW	1 WSW					4 SW	3 SSE	1 WNW
14	1 N	1 WNW	1 WNW	1 WSW		1 W	2 SSW			3 SSW		4 SW	4 SSW				3 NNW	3 NNW	2 NNW	1 WSW				
15			1 SW			1 S				1 E				2 WNW	3 WNW		2 WSW	1 ESE	1 SE	2 WSW	1 SW	3 ESE		2 SSE
16		4 S	5 S	6 S	6 S		3 S		4 SSW	4 SSW	6 SSW	5 SSW	5 SSW					3 SW	2 SW	3 SW	4 SW	3 SW		
17		1 SW	0 W	0 S						1 SE		0 NE					0 NNE		1 SW					3 NNW
18													1 NNW			1 WNW	1 NW		0 N	2 SW				
19																2 NNW								
20										3 SW			4 SSW	4 SSW	4 SSW	4 SW		4 SSW						
21			1 SSW													3 WNW	4 WNW	2 WNW						
22											1 NNW	3 NNW	3 NNW			2 NNW								
23		0 SW									1 N					4 WNW	3 NW	3 SSW						
24										4 WSW	6 WNW	6 WNW	4 W	2 SW	0 N	1 NW	2 WSW	1 NW	1 WNW	2 N	3 NW	3 NW	3 NW	3 NW
25	2 NW	1 NW			1 NW	1 NW	1 NW								1 SW			4 SSW						
26										6 SSW	5 SSW	5 SSW	5 SSW	5 SSW	4 SSW		2 SSW	1 SSW						
27									4 S	4 SSW	4 SW		7 SW	8 SW	8 SSW	7 SSW	5 SSW	3 SSW				6 SSW	6 SSW	
28								7 SSW	8 SSW	9 SSW	9 SSW	9 SSW	10 SSW	8 SSW	8 SSW	6 S	6 S	9 SSW	3 SSE	4 SSE	7 S	5 S	7 S	7 S
29	4 S	6 SSW						6 SSW	5 SW	8 SSW	6 SW	5 SW		3 SW		1 N								
30																2 NNW	0 NW	0 NW	1 NW	1 NW				
31											0 NNE					0 SSE								

(01/06/83-RPI)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS D
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1										0 NW	0 NW	2 WNW	2 WNW	2 NW	3 WNW	3 NW	2 WNW							
2										1 NW	2 NW	2 WNW	2 WNW	2 WNW	2 NW	2 NW	2 NW							
3										0 N	1 NW			2 WNW	2 NW	2 NW	2 NW							
4										1 ENE		1 N	1 N	3 NNW	2 NNW	2 NNW	2 NNW							
5											2 SW		3 SSW	3 SSW	3 SSW	3 SSW								
6											2 W			2 SW		3 W	2 WNW	1 WNW			0 ESE			2 SW
7			0 ESE						0 SW															
8										1 NW							2 WNW							
9										1 NE	1 N			1 NNW	1 NW	1 WNW	2 WNW							
10										1 E		1 SW			1 SSW	0 SW	1 NNE							
11										0 ENE	1 N					1 NNW	1 NNW							
12										1 S							4 SSW							
13								2 SE	4 S	2 SE	5 SW	6 SW		7 SW			4 SW		1 SE					6 SSW
14	8 S	7 SSW	5 S	4 S	4 SSE	6 S	7 S	8 SSW	8 SSW	8 SSW	7 SSW	7 SSW	8 SSW	7 SSW	8 SW	7 SW	4 SW							
15										4 SSW						4 SSW	5 SSW	4 SSW				0 S		
16									1 E	0 WSW					6 SW		3 SSW							
17	1 SE			2 SE					3 SSE			1 S			8 SSW	7 SSW	5 SSW	6 SSW	5 SSW	6 SSW	6 SSW	6 SSW	6 SSW	6 SW
18	4 WNW	6 NW			0 W	1 SW			3 W	2 NNW	1 NNW	5 NNW	1 NNE	1 ESE	1 NNW	2 NW	1 NW	2 NW	3 NW	2 NW	1 NW	1 NW		
19											1 E	1 E	1 ESE	1 ENE	1 E	1 SE	2 SSE							
20										2 SSW	4 SW	4 SSW	4 SSW	4 SSW	1 SSW	1 SSE	1 WSW	1 SSE	1 SE	0 S	1 SSE			
21										3 SSW		3 SW	3 SSW	4 SSW	3 SSW	4 SW	4 SSW							
22				3 SSW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	6 SSW				6 SW		5 SW	4 SW	3 WSW	1 W	2 NW	3 N	2 WNW	2 WNW	1 WSW
23	0 NE	0 ENE	1 SSW	1 SE					1 SSE	3 SSW		6 SW	7 SW		8 SW	7 SW	7 SW	6 SW		5 SSW	6 SSW			
24	7 SW	7 SW	7 SW	7 SW	7 SW	6 SSW		5 SSW	5 SSW	8 SSW	10 SSW	9 SSW	10 SW	10 SW	10 SW	9 SW	8 SW	6 SSW	6 SSW	7 SSW	6 SSW			
25															3 N			3 NW	2 NNW					
26											1 SW	4 SSW	3 SSW	2 SW	3 SSW	3 SSW	2 S							
27										1 SSW	4 SSW	4 SSW	7 SW	3 SSW		2 W	2 WSW	2 SSW	0 W	1 SSW				
28											1 NNW	1 NNW	1 NNW	1 WNW	0 WNW	1 NNW	2 W	1 W		1 W				
29										0 SW		1 NE					1 W	1 WNW	1 W	1 W	2 W	1 WNW	1 WSW	0 SW
30										1 W	0 NNE		5 WNW	7 WNW	6 NW	6 NW	5 NW	5 NNW	3 NNW	2 NW	1 WNW		1 SW	1 S

1/06/83-RP11

HOURLY WIND SPEED AND WIND DIRECTION FOR STAB' Y CLASS D
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 SW								3 S	1 S		4 SSW		4 SSW			4 SSW	2 S	0 SE				
2							4 SSW	4 SSW	3 SSW				6 SSW	7 SSW	6 SSW	6 SSW	6 SSW	6 SSW	5 SSW	4 SSW				5 SW
3	5 SW									0 NE	0 NNE	0 NW	2 WNW	1 WNW	3 WNW	2 NNW	2 SSW							
4											2 SE	1 NW	0 WSW	3 SSW	2 SSW	2 SW	1 SSE							
5				0 SSE	1 SE	2 S				2 E	2 SSW	2 SW	3 SSW	3 SSW	4 SSW	4 SSW								
6										2 S		4 SW		6 SW	4 S	3 SSW	2 S							
7											1 SW	3 SW	3 SW	2 SSW	3 SW	3 SSW								
8														3 SW	2 SW	3 SW	2 SSW							
9										2 SE				4 SSW	3 SSW	1 ESE								
10	2 SSE	1 SE	1 ENE							3 SSW	0 W	3 SSW				4 SSW								
11			2 SSW	2 SSW											2 W	2 W	1 WNW	2 NNW						
12									0 ESE							4 SW	2 SSW		1 S	1 S	1 S	1 S		1 SSW
13		0 SSW		1 SSE	1 S		2 WSW	2 NNW	0 ENE	0 NNE	0 NNE	2 NNW	2 NNW	2 WSW	1 W	1 W	2 W							
14							3 SSW	4 SSW	4 SSW	5 SSW	6 SSW	5 SSW		5 SSW		5 SSW	5 SSW	5 SSW			0 ESE	1 SSW		4 SSW
15	4 SSW	4 SSW	5 SSW	4 SSW	6 SW	7 SW	7 SW	5 SSW	4 SSW	5 SSW	6 SSW	6 SSW	8 SW	8 SW	8 SSW	7 SSW	6 SSW	7 SSW	7 SW	5 WSW		1 NNE		
16												1 N		1 NW	1 NNW	2 NNW	1 N	1 SSE		1 NW		0 WSW	1 WSW	2 WNW
17	2 NNW	2 WNW	1 NW		2 WNW		1 SE	1 ESE	1 ESE	1 ESE			2 E	1 ENE	1 ENE	2 E	1 SE							
18											1 SSW	2 SW	3 SSW	3 SSW	3 S	2 SSE								2 S
19	2 S	2 S		1 S	3 SSW	3 S	2 SE	1 SSE	1 SE	2 SSW	2 SW	4 SSW	4 SW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	2 S	3 S	3 S	1 SSE		1 S	
20	1 S		1 ESE	1 E	2 ESE	1 ENE	0 SSW	4 SW	5 SW	8 SW	7 SW	8 SW	8 SW	8 SW	8 SW	7 SW	7 SW	8 SW	8 SW	9 SW	10 SW	11 SW	10 SW	9 SW
21	8 SW	5 WSW		2 W	2 WNW	2 WNW	1 NNW	1 W	0 NW	0 NW	1 NW	2 N	1 NW	2 SE	0 NW	0 NNW			1 NW	1 NW	0 NW	0 NW		2 NW
22	3 NW	3 NW	3 NW	2 NW	2 NW	2 NNW	1 NW					0 NW	1 NW	2 NW		1 NNW	3 NNE	2 NNE		1 NNE	1 NNE	1 NNE		
23														1 NNW			1 W							
24										2 S	3 SSW	4 SSW	4 SSW	4 SSW	4 S	4 SSW	4 SSW	2 SSW	5 SSW	5 SSW	5 SSW	4 SSW	4 SSW	5 SSW
25	4 SSW	4 SSW	4 SSW				3 SSW	4 SW	4 SSW	2 SSW	3 SW				6 SW		3 W		4 WNW	5 WNW	4 W			
26	0 SSE	1 S	1 SSW							2 SSW								4 SSW	3 SSW		4 SW	7 SW	8 SW	7 SW
27	7 WSW	3 WNW		2 WSW	4 WNW	1 W	2 W	2 W	3 WSW	3 W	3 NW	4 NW	5 WNW	6 W	5 W	5 WNW	5 W	7 W	5 W					
28												2 NW		4 W			2 S	2 S						
29										4 S	6 S	6 SSW	8 SSW	8 SSW	5 SSW	4 SSW	2 SW	4 S	4 S	4 SSE	1 S	8 SSW	8 SSW	10 SSW
30	7 SSW	3 SSW	4 SSW	9 SW	9 SW	8 SW	8 SW	8 SSW	8 SW	7 SSW	8 SW	8 SW	9 SW	9 SW	9 SW	8 SW	6 SW	3 WNW			4 W	1 WSW	2 W	
31		3 W										1 SE	1 ESE	0 SSW	4 SSW	1 SSW		2 ESE	2 ESE					

(01/06/83-RP1)

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JAN 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 SW															2 SSW							
2				2 SE		1 SE			2 SSE									3 S	3 S	0 ESE	2 ESE		1 SSE	0 SSE
3		0 SSE			0 SW	1 SSW	1 SSW		0 SW	0 NNE								2 SSW		1 SW	1 SSW	0 SE	0 SE	0 SE
4	0 ESE				1 ESE	1 SE	2 SSE	2 SSE	2 SE															0 SSW
5		0 WSW				3 NW																1 NNW		
6					1 SSW		1 SE	2 SE											1 S	1 S				
7											1 ENE		1 NW					2 SW	1 SW	0 SW	0 SSE			
8		0 SSE								1 SW	0 NNE						1 NW	2 WSW	2 SW	0 ESE				
9																		1 WNW	2 SW	1 SW	0 S	0 E		
10									0 SSE	0 SE								2 WSW	1 SW	2 WSW	1 SW	0 SW		
11			1 SW			0 WSW												2 WSW	2 WSW	1 SW	0 SSW	0 SSW		
12				1 WSW		0 SSW					0 NE							0 W	1 SW	0 SW	1 SW			
13																		1 W	1 W	2 WSW	1 SW	0 S		0 SW
14																		1 SSW	1 SSE			2 SSE	1 S	1 SE
15				1 S	1 SE	1 SE	1 SSE		1 SSW	0 S								1 NNE	1 WSW	1 W	1 SW	1 SW		2 W
16	2 WSW	2 SW	1 SW	1 SW	1 SW	2 SW	1 SW	0 SW	1 SW										1 SW		1 SSE	2 SSE		1 SE
17	1 ESE	1 S	1 SSE	1 S	1 SSW			2 ESE										1 SSW	2 SW	2 SW				0 SW
18	0 SE							0 SSE		1 SW										1 SW	0 SW	1 SW	1 S	1 SSW
19	2 SW	1 SSW	1 SW	1 SW	0 SSE		1 SW		0 SE	1 E									1 SSW	1 SW				
20		1 SSE				1 S		0 ESE	1 WSW									2 N	2 NE	1 WSW	1 SW	1 SW	0 SW	0 SW
21	0 SSE	1 SW	0 S															1 W	1 SW	1 SW				
22	0 SSE							1 SE		0 ENE								1 WSW	1 SW	1 SW	0 ESE			
23																			2 SE				3 SSE	2 SSE
24	1 SE	4 SSW		4 SSW	4 S	3 S	2 S		2 SSE															
25	1 SSW	0 W	1 SW	1 SW		1 WSW	2 WNW	1 SW													0 SW			
26	1 SW	1 WSW	0 SW	2 SW		1 ESE	1 S		0 S															1 SSW
27						1 E	1 SE	1 SSE																
28																		4 S	4 SSE					
29							1 SW																	
30	4 SE	4 SE		3 E	3 E	2 ESE														3 S		2 S		
31			1 SW			2 SW	1 S															2 SW		

/06/83-NP()

HC IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1				1 WSW									4 N	4 NNW					1 NW	1 NW				
2										1 ENE								4 SSW	4 SSW	0 SSE	1 SSE			1 ESE
3										1 E	1 NNE								2 WSW	2 WSW	1 WSW	0 SSW	1 SW	
4			1 WSW	2 WSW			0 W	1 SW	1 WSW										1 W	2 WSW	2 SW	1 SW		0 SW
5			0 WSW					0 SSW		1 E									2 SSW	1 SSW	1 SSE	1 S	1 S	
6	1 ESE					1 ESE	1 SSE	1 S	2 SSE										1 W	2 SW		0 SW	1 SW	2 SW
7						1 SSW				0 ENE									2 SSW					
8		2 SSW	3 SSW	4 SSW	4 S	3 SSW	4 SSW	4 SSW											4 SSW	4 SW	4 SW	4 SW	3 SSW	1 E
9	2 SSW																							
10																			1 SSW			2 S		
11	2 SSE	3 S	1 SSE	1 SE		2 S	2 S	1 SSE																
12		1 ESE	1 S	1 ESE	1 SE	1 SE		1 S											3 SSW	0 ESE	2 ESE			
13		1 S							1 E											2 ESE	2 SE			2 SSE
14	2 SSE	3 S	1 E	2 ESE	1 E	1 NNE		1 SE											3 SW	1 S	0 N		1 ESE	1 WNW
15	2 WNW				2 ESE	2 ESE		1 WSW											2 W	2 WSW	1 SSW		0 ESE	0 SSE
16	0 SE	1 SE	0 S	1 SW					0 W										2 SSW	1 ESE				
17			1 SE			2 S	1 S	1 S	1 SW	1 NNW									1 WSW	2 WSW	2 SW	0 ENE	1 SW	0 SSW
18	2 SW		1 SE	1 SW	1 S													4 S	4 S	4 SSW	3 SSW		1 E	
19		1 S	1 S	0 SE	0 ESE	1 SE			1 ESE															
20					4 SSW	5 SSW	4 SW																	2 NW
21	1 NW	0 WSW					1 W													2 SW			0 SW	
22	0 SSE			0 E	1 SW			1 SW											1 SW		1 E			
23	1 ESE						1 ESE												2 SSE	2 ESE		2 SE		
24						3 SE	3 SSE	2 SE	2 ESE										4 SSW	4 S	4 SSW		3 SSE	2 ESE
25		4 S	4 S	4 S	3 SSE			3 SSW													3 S	4 SSE	4 SSE	4 S
26	4 SSE	3 SE	3 ESE	2 SE															3 SSW					
27							4 SSW	1 ESE											2 SW				1 SW	0 SSW
28			1 SSW	0 SSW	1 S	2 SE		2 ESE											3 SSW		0 S	0 SSW	0 ESE	1 SW

/06/83-HPI)

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD I[illegible]REES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0								1										3	3	3	2	2	2
	SSW								SE										SSE	S	S	SSE	SE	SE
2	2	2	3	3	3	2	1	2	2											4			2	2
	SSE	SE	S	S	S	SSE	SSE	S	SSE											S			SSE	S
3	0	1	0	1	1				1															
	S	E	E	SSE	S				WSW															
4																			0	2	2			
																			NW	SW	SSW			
5						2													2	2	1	1	1	1
						ESE													W	SW	SW	SSE	SE	SE
6			1	2	0	1	1	0	0					4								1	2	3
			SE	SSE	WSW	WSW	SE	WSW	W					WSW								SE	S	S
7	3		1	1	1	1	1	1												2	2	0	1	1
	S		E	SE	SE	ESE	E	ESE												SW	SW	SW	WSW	SW
8	0		1								0									1		2	1	2
	SW		SSE								NE									SW		SSE	SSE	ESE
9	2			0			0		0	0									1	2				
	ESE			WSW			SE		NE	N									NNE	SSE				
10	0		1	0		0													1	1	1	1		0
	E		SSE	SSE		SSW													ENE	SW	SW	SW		W
11			0	0	1		0												2	1	0	0		
			SW	NW	SW		SW												W	SW	SSW	ESE		
12					1		1														2	1		
					WSW		SSE														S	S		
13																		2	1	1	0	2		
																		SSE	WSW	SSW	SSW	S		
14				1	2		1	1											2	2	2	2	1	0
				SW	SW		SSW	WSW											NW	W	WSW	SW	SW	WSW
15	1	1	1		0	1													2					
	S	SSE	SW		SSE	SW													SW					
16	1			2	2		3	2															1	1
	ESE			SE	SE		SSE	SE															SE	S
17	4																			2	1	1	0	0
	W																			SW	SW	SW	SW	SW
18							1	1												1	2	2	2	2
							SW	SW												SW	SSW	SSW	SSW	ESE
19	2	2	2	2	2	1	2	2																
	SE	SE	SE	SE	SE	SE	SE	S																
20			1	3	4	3	4	4												1	1		1	2
			SSE	S	SSW	S	S	S												ESE	S		SW	W
21																				1			0	
																				SSW			SE	
22							1	1											1	1	1	1		1
							WSW	E											SSW	SE	SE	SE		SE
23	1	1	0	1	1		1												1	1				
	S	S	E	SSW	WSW		SSE												SSE	SSW				
24			2			1	1	1												2				
			W			SE	SE	SE												SW				
25																					1		2	0
																					S		S	NE
26	4		5	3	4	2	3															4		
	S		SSW	S	SSE	SSE	SE															SSW		
27																				1	0	0	1	1
																				SSW	W	WSW	WSW	SW
28		0																				2	2	1
		WNW																				W	W	WSW
29	2	1		0	1	1	1													3	4			2
	SW	SSW		SSE	SSE	S	SE													SSE	SSE			SE
30	4	5													4					2	2		1	1
	SSE	S													N					SSE	SSE		SSE	SSE
31	1							3											4	4	4	2	2	2
	SSE							SSW											S	S	S	SE	SSE	SSE

/06/83-API

MO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD [illegible]EGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 E		4 ENE	3 E															3 SSW	4 S	4 S			
2	4 S						4 S												3 SW		5 S			
3																								1 SW
4	1 SW	1 SW	1 WSW	1 W								5 NNW	4 NNE			4 N					1 SSE	1 SSW		
5												3 SSW	3 SW	3 SSW					3 SSW	2 SE	3 S	2 E	2 E	3 S
6	5 S	1 SE	2 ENE	2 ESE	2 SE														4 SSW	4 SSW		2 WNW	2 W	1 W
7	2 WSW	2 SW	1 SW	0 SSW				1 WNW											0 NE			2 SW	1 WNW	
8																				4 SSW	4 SSW		2 WSW	
9	2 S			2 SE	4 S														4 SSW	4 SSW	4 SSW	5 S	4 S	4 S
10	4 SSE		5 S		3 S	2 SSE		0 E											5 S	3 SSW	3 S	4 S	3 S	
11	3 S	4 SSW	3 SSW		0 WSW	1 ESE	2 SSW												4 WSW		3 SW	3 SW		3 SSW
12	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW	4 SSW												3 SSW	3 S	2 S	2 SE	1 ESE	0 S
13	1 SSW	1 NNE	0 NE	1 E		1 S	0 WNW												3 N	1 ENE	1 SSE			
14																		3 NE	2 NE	2 SSW		3 SSW		
15		1 SSE																			1 ESE	1 SSW		
16					1 SE			1 S											3 SE	3 SSW	4 SSW	4 SSW	3 SSW	
17								1 NE											3 WSW		3 SW			
18							0 WSW																	
19																				3 SW	3 WSW	2 SSE		
20		1 S		0 SSW	1 SSW	1 SSE		0 ENE												4 SW	4 SW	4 SW	4 SSW	
21	1 WSW		0 S				2 SSW																	
22	1 WSW	1 NNW	1 NNW	1 W	2 SW	2 SW	1 WSW													0 E	1 SSW			
23		0 S	1 SSE															2 NNE	1 ENE	1 S				
24								1 ENE																1 ESE
25	0 E																					4 S	3 SSW	3 SSW
26		4 S	3 SSW	3 SSW	5 S	4 S	3 S												4 SSW	4 SSW		3 SSW	4 SSW	
27	4 SW																							
28	1 NW	1 SW		1 W	2 W	2 WSW														1 W	1 WSW	0 SSW	2 SW	
29							0 SSE													1 NNE	2 SW			
30					1 WSW	1 SW	0 W											2 NNE	2 NE					

(/06/83-HPI)

HO[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD [illegible]REES AT 10M
WS I[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1						0 W																		
2																	4 S						2 S	1 S
3	3 SSW	2 SSE	4 SSE	1 W	2 SE	1 SSW	1 E					3 NNW			4 NW		0 SE	1 SE	1 W	1 W	1 SSE	1 ESE	0 ENE	1 E
4	1 S	1 SSW	0 SW		1 WSW		0 NE	0 ENE	1 ENE	1 E		1 N	1 NNE	2 N							2 S			
5		1 SW						2 E	2 SSE		4 S													
6		1 SE	1 SSW	4 W		2 E	2 ESE	2 SE																
7			1 WSW	1 SW	1 S	1 SSW														2 SW		1 WSW		
8		1 SSW	0 W		1 S			4 W						1 N										
9										2 N	2 N	2 NNE									1 SW			
10		1 SSE	2 SSE					1 SSW									-		3 S	4 SSW	5 SSW			
11			5 SSW	5 SSW	4 WSW				0 SE	1 SSE							2 NNW					3 S		
12				1 E				1 WNW	1 NNW	2 NNW											2 S	1 SSW		1 ESE
13	1 SSW		1 WSW	1 WSW	1 WSW	0 NNE	0 SW			1 NE					2 NNE						2 SSE			
14					1 ESE		2 SE												4 SSW	4 SSW	3 SSW	4 S	4 ESE	3 S
15	2 SSW	3 SSW	5 S		4 S	4 S								4 WSW										
16	3 SSE	1 ESE	1 SSE	1 SE	1 SSE	2 SSE																2 SSW		1 S
17	1 SW	2 SW	1 SW	0 SW																				
18																			2 SSW				1 SSW	0 SW
19	0 SE	1 S	1 SE				2 SE	2 SSE																
20				4 E	4 SSE	2 SE	3 SE															4 S		2 SSW
21	4 S	4 SSE	3 SSE	4 S	4 SSE		3 SE														2 SSW			1 SW
22	3 SSW			4 SW	3 SW	3 SSW								2 NNE				1 ENE		2 SE	1 ESE	0 ESE		
23		1 SSE	1 W	1 W								2 NE	2 N	3 NNE	3 N		3 NNE	3 NNE			1 SE	1 SSE	0 SW	0 SW
24	0 SW							1 E									1 E	1 SSE	3 SW		1 SSE	1 S		1 SSE
25	0 WNW				0 SE			0 ENE						4 SSW		2 SE				2 SE				1 NE
26	0 SSW	2 SW	1 SSW		1 SW	2 S	0 SE															4 SW		
27	3 SSW		2 S	1 SE	2 S	1 SSW																	2 SW	2 SW
28	1 SSE	2 S	1 SSE	1 S	1 WNW	2 WSW	0 SE	1 ENE	1 ENE	1 NNE			1 SW											
29												2 N	3 NW					1 ENE	1 ENE		1 SE	0 SE	0 SSE	
30		1 W		1 SSE				0 ENE	1 NNE															
31		2 S	2 SSE	1 WNW	2 W	1 ESE	2 SSW	3 SW		4 S			2 SSW	2 SSE					2 SSW	2 SSE	2 SSE		1 SE	2 SW

I/06/83-HPI)

HO[illegible] IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD[illegible] GREES AT 10M
WS [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3														4 NW									1 SE	
4						1 SSW		0 NNE	1 NNW	1 NNE	1 NNE						2 N	2 NNE	2 NNE		1 S	0 SSW	1 WNW	
5		1 S			1 S			0 N		2 N	1 N	2 N				2 NNW	2 NNE		2 NE					
6								0 NNE											4 SW	3 W	0 ENE	2 ENE	2 ESE	
7			2 SSE					4 SW											3 SW	4 WSW	3 SSW	2 SW		
8	4 SSW	5 SW	5 SW	4 SW	4 SW	4 SSW	4 SW													4 SW	4 SSW	3 SSW	4 SSW	
9	5 SSW			5 SW	4 SSW		1 NNE		3 WNW												0 S	2 SW	2 WSW	1 SSW
10				1 SSW	2 SW		0 WSW																	
11		2 W	2 WSW	2 SW			0 NE			1 N											4 SSW	4 SSW		
12		4 SSW	4 SSW	4 SSW	4 SSW		3 SSW														3 SSW	4 SSW	4 SSW	5 SW
13	4 WSW	3 W	1 NW	1 NNW	4 NW																	1 SW		
14			1 W	1 SW	2 SW	0 W	2 NW																	0 S
15	1 SSW			1 SW	0 SSW	1 S	1 E																	
16																							0 W	0 S
17							2 W																	
18	1 SW	2 SW	2 SW	1 SW					1 WNW										3 WSW		2 SW			
19			1 SW	1 SSW				1 ENE													2 W	2 WNW	0 SW	0 SSW
20	1 SSW	1 S						0 WNW													2 WSW			2 S
21			1 S		1 SSW			1 NNW													3 NW	1 WNW	1 N	0 SW
22		0 S	2 SSE							2 NE										0 ESE				
23					1 SE				4 SW											1 ESE	1 ESE	1 NE	0 SSW	1 SW
24					1 SW			1 NW												2 NNW	0 SE	1 WSW	0 SSW	
25	0 S				2 SSE			2 W										2 NNE		2 ESE	3 SSE			3 SSE
26	4 SSE	4 SSE	4 ESE	3 E	3 SSE	3 SSE															2 SE	4 ESE		3 S
27	4 SE	3 S				2 E		2 NE	2 SSW												2 S		3 SE	4 SSE
28	3 S	2 SE	0 S	2 SSE	2 SSE			1 ENE	0 SSW				4 SW	2 SSW						2 SSE	3 S	4 S	1 E	
29																								
30																								

/06/83-HPI)

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
40[illegible]REES AT 10M
WS I[illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		3 SSE	3 SSE				0 SE	1 NNE														1 SW	1 SW	0 WSW
2							0 WSW		2 WNW	2 NNW		1 NNE	2 NNW						2 NNE			1 WSW	2 WSW	2 SW
3	1 SW	0 SE	0 S	1 SSW	1 SW	0 N	0 SSE								4 SSW				3 NNE			1 ESE	1 SSW	0 NW
4		1 S	1 SW	1 SW				1 ENE	1 N			4 NNE		3 NNE	2 NNW				3 NNE					
5						1 SSE		2 E	1 NE						2 NE	2 NE		3 SSE	2 S	4 SSW				
6									3 SW	5 SW									4 W			2 SE		
7																								
8															2 NNE								2 SSE	2 ESE
9	2 SE		2 ESE			2 SE															4 SE	5 SSE	1 SSW	0 SE
10	1 SSE	1 SE	3 SE				2 E										1 ENE		1 W			1 SSW		
11							2 E							2 NNE	2 ENE						3 ESE	4 SE	2 ESE	0 E
12	1 SSE						1 ESE			2 SSW		1 S									2 SE	1 SSE	3 SSE	4 SSE
13	3 SSE	1 E	2 ESE	3 S	2 S	2 S	1 SSE	1 S												4 S	3 S	1 ESE	1 E	2 ESE
14			0 NNW	1 SW	1 SW	1 S	1 SSE		1 NNE	1 NNE		0 N		1 NE			2 NNW				3 S				
15		1 SW						0 WNW		2 NE	1 NNE						2 NNE	2 NNE		2 E				
16							1 SE									2 NE					1 ESE	2 SSE	3 SSE	1 SSE
17	1 ESE	0 SSE	1 ESE	1 SSE	1 SE	2 SSE	1 SSE	2 S	3 S			3 SE		4 S	4 S	4 S			4 SSE	3 SE	4 SW			
18								1 ESE								3 SSE	3 S	3 WSW		2 SSW			3 SE	
19	1 SSE						2 SE													2 W			1 SW	
20								1 NE	0 W											3 SW	3 SSW			
21	0 S	0 SSW						1 SW											4 SW			2 SW		
22								2 SSW													2 SW			
23	0 SW							0 E									1 SSW				4 SE	3 SSE	1 SE	1 SE
24																						4 SSE	1 SE	3 SSE
25			5 SSE	0 NNE		3 S	1 NW												4 SW	4 ESE	4 SE	1 ESE	1 SSE	0 W
26	1 SE	4 SSE	5 SSE	4 SSE	4 SE	1 ESE	0 WSW														1 ESE		1 SSE	1 SSE
27	1 S	0 NW					1 SE														1 SE			
28								1 ENE																
29								1 E							2 WNW	1 NNW			3 S	4 SSE	4 S	4 S	3 S	
30					4 SSW	0 E															3 SSW		0 NE	0 W
31																								

/06/83-API)

HOURLY WIND SPEED AND WIND DIRECTION FOR STA[illegible] CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																				2				
4																				SW				
5								1												4	3			
								ENE												SSW	SW			
6																			3	3	2		1	
7							0												NNE	ENE	E		SSW	
							WSW													3	3	1	1	2
8																				NE	ENE	ESE	SSW	SW
																			2	2				4
9		2	3				2								5				NNE	SE				E
		W	WSW				SW								N					4	2	3		
10			0	0		2	1													NNE	N	NW		
			W	W		SSW	NNW												1	2	0	0	0	
11		1	1	1	1	1	1												ESE	SSE	E	ESE	NNE	
		E	S	SSW	ESE	SE	S													1			2	2
12	1	0	1	1													2		2	W			ESE	SE
	SSE	SSW	SW	SW													SSW		SE	2	1	2		
13						1	2	2	2	5	5			4						SW	SSE	S		
						S	S	S	SSW	SSW	SSW			SSW							2	2		1
14	1	1	1	1	1	1	1	1	1			2	2	1	2	3					SE	SSE		SE
	SSE	ESE	SE	SE	SE	ENE	ESE	E	SSW			E	E	NE	NW	NW				1	1			
15	0	0	0	1					1						4	4				SSW	S			
	SSW	S	SSE	SSE					SW						SSW	ESE				1	1	1		
16	1						0	0	0	1			3		4					SE	S	ESE		
	SSW						WNW	ENE	N	NNW			NW		NW					2			1	
17				1	0			0	0	1	1	2	2		4	3	2			SSE			SE	
				SW	SSW			E	NNE	N	N	NNW	NNW		NNE	NE	N				2	1	0	0
18							0	0	1	1											SE	SSW	S	SW
							SW	NNW	NW	N										3				2
19								1	0					4	3					SW				S
								E	WSW					NE	NNW					2			0	2
20	1	1	1	1		0	0		1			1								WSW			NE	SSE
	SSE	SSE	S	SSW		S	ENE		N			NNE								3	3			
21																				SW	SW			
															3		2		3	4	4	3		
22	2			1	1	3	2	1							S		ESE		SSW	S	S	SSE		
	SSW			W	SE	S	SE	W												3			1	1
23	2	2											4							SW			SSE	SE
	SE	SSE											WNW								1	2	2	
24			1						1	1	1				4			1	2	3	ESE	SE	S	
			SSE						SSE	NE	WNW				S			W	SSW	ESE	3			
25									1		2		3						4	4	SSE			
									ENE		NNW		NW						SSW	S		1		
26									1	2				2							2	1		
									NW	NNW				NNW							SE	E		
27				0	1			1	1		1	2	2		1				4	4	2			
				SSW	SW			ESE	NE		NNE	N	NNE		NE				SSW	SSW	S			
28	0			1	1	0	1		1	0	0		4						3		4	4		2
	ESE			SE	SSW	SSE	S		E	NNW	SW		SSW						SW		SSW	SW		E
29			2	2	2	1	2								2				3	4			3	1
			ESE	E	ESE	ESE	S								NE				SSE	S			ESE	ENE
30	3	3	5				4	3	4									4	3	5	5		4	3
	SE	SE	WSW				SSE	SSE	SSE									SE	SE	S	SSE		SE	ESE
31	3	2	2					1	1	5										4	1	3	2	2
	SE	ESE	SE					ESE	SW	SSW										SSW	ENE	SSE	ESE	SE

(01/06/83-RPI)

HO IND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WI GREES AT 10M
WS PS AT 10M

C8-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1									2										4	4	5	4	4	4
									SW										SW	SSW	SSW	SSW	SSW	SSW
2	4	5	4	4	4	3	1	1		4													4	3
	SSW	SSW	SSW	SSW	SSW	SW	SSE	SSE		SW													ESE	ESE
3	3	3	4	1	0	4		2				4				2	1		2					
	SSE	SE	ESE	ESE	ESE	SSE		E				S				S	S		E					
4								1	1										3	5				
								ESE	ESE										SW	SSW				
5	3	4	3												4									
	SSE	S	SSE												SW									
6																			1	2	0		0	0
																			SSE	SSE	NNW		SE	WSW
7											1		3	4				0	1	1	1			
											N		NW	NW				SW	SSE	SSW	S			
8			1	0	0	0			0	1	1	3		4						2	3	4	1	2
			SSW	SW	S	SE			NE	N	W	SW		WNW						S	S	SW	SE	SE
9				0	0	0	1	0		1							1	1	1		4		1	2
				W	ENE	SSW	SSW	S		NE							E	S	SW		SSE		SE	SE
10		1	1	1	1		1	1	1	1		1		2			1	1	1		2	0		
		E	SSE	S	SSW		SW	SSW	E	NNE		NE		NW			SW	ESE	S		SSW	S		
11																			1	1		1	1	2
																			S	SSW		ESE	SSE	S
12		1	1						0		2							3	3			4	4	1
		S	S						NE		SSW							SE	S			SE	SSE	SE
13	2							1	2	2	1	1	2			3	3	4	4	1	2			2
	SE							E	E	ENE	N	NW	NNW			E	SSE	SSE	SE	SW	S			SSE
14				1	1	1					0		1		3	4	4	2	3	1	3		0	1
				W	SE	SSE					ESE		ENE		SSE	SSW	SSE	SE	SSW	SE	SE		E	S
15					2	0			0	1	1	1		2	3	3				1		1	0	
					SW	E			NNE	N	NNE	NNE		NW	NW	NNE				SSE		WSW	SW	
16				1		2		1	1		1		3	4	3						0	0		0
				SW		WSW		WSW	NW		NW		NW	NW	NNW						SSE	S		ENE
17			0	1			0		0	2	2	2	2	4	3							0	0	
			NW	WSW			SW		WNW	WNW	NW	NNW	N	NNE	N							SW	SSW	
18	0				1						1	1	1	1	1	2			3	2				
	SSW				SW						NW	NW	WNW	NW	NNW	NNE			NNW	WSW				
19						2	2		2	3	3			3	4	4		3	3	4	5	4	4	
						S	SSE		SSW	SSW	SW			SSE	SSE	S		S	SW	SSW	SSW	SSW	SSW	
20																			3	1				3
																			SE	SE				WNW
21		3	4	4	3				1	4									3	4			2	
		SE	SSW	S	SSE				SW	SW									SW	SSW			SSE	
22	0	2	0		1						5								3					
	E	S	SSW		S						SW								SW					
23	2				1	1	1	1	1	1									4		2	2	4	
	SSW				SE	E	SSE	SE	ENE	N									SSW		SE	SSE	S	
24															1	2	1	1	2	1	3	3	2	2
															ESE	ENE	ENE	ENE	SSW	S	S	S	SE	SSE
25	5	4	3	2	4	4														0			1	1
	S	S	SSE	SSE	S	S														ENE			SSW	SW
26	1	2	1	2	2		1	1	0	2	3	2				4			3	3				
	SW	SW	W	WSW	WSW		SSW	E	NE	NNW	NW	NNW				NW			SW	SSW				
27									2	2	4	4	4	4	4	4			2	2	2	3	4	4
									E	S	SW	SW	SW	SW	SW	SW			SW	SSE	SSE	SSE	SSE	SSE
28	4	4	5		4				5										3	3	3	3		3
	S	S	S		S				SSW										SW	SSW	SSW	S		S
29		4	4	5				5											2	2			3	4
		SSW	S	S				S											SW	SSW			SW	SW
30	0	2	1		3						1	1	1		3						2	2	1	0
	NE	SSW	E		WNW						NNE	NNE	NNE		NNW						WSW	WSW	SW	SSW

/06/83-HP11

II-117

HOURLY WIND SPEED AND WIND DIRECTION FOR ST Y CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		0			0	0				1	2	2			4							1		2
		S			W	SE				NNW	NNW	NNW			SW							SSW		S
2			1	3															3	4	4	4		
			WSW	SW															SSE	S	SSE	SSE		
3	2	0																						
	SE	S																						
4												1												
												S												
5	3		0	2	2	3		0	0		4	4						1	2	2				
	SSE		NE	SSE	SE	S		ESE	SSE		SW	SW						SE	SSE	S				
6	1	1	1								0			2	2	3	3	3			3	1	3	
	SE	ESE	SE								ENE			SW	SW	SW	SSW	SW			SSW	S	SSE	
7				4	5	4	1	4		4										5			4	3
				S	S	S	SSE	SSW		SSW										S			S	SE
8					4	2									1									
					S	W									ESE									
9				1	0	0		1	2	1		1	1					3	2	2				
				WSW	SE	S		WSW	NW	NW		NNE	W					SW	S	S				
10				2	1	3	5	3	3					5							3	3		
				S	SE	S	S	SSE	SSE					SSW							SSE	SSE		
11																		2	2	2	1			2
																		SE	ESE	SSE	S			SE
12	1	0	2	0	1	1	0	1	1	1										1				
	SSE	ESE	E	S	NNE	ENE	SE	ESE	NNW	SW										SW				
13		1			4	3	2		0										1	2	2			
		SSE			S	S	E		SSW										W	WSW	WSW			
14					1			2	2												1	2		1
					SW			S	S												WSW	WSW		SW
15	1	0		2	2		0	1	1		1	3	3			3							2	
	WSW	SW		WSW	SW		SW	SE	E		NW	WNW	WNW			W							SSE	
16	2					2		2															3	3
	SE					S		SE															SSW	SSW
17	2				1	0	0	0	1				1	1	1	1				1	0	0	1	
	SSW				SSE	S	SSW	SE	E				ENE	NE	NE	NNE				SW	WSW	NW	NNW	
18	2	1	2	1	1			1	1	0	1	1			2						0	0	0	
	WSW	SW	WSW	SW	SW			E	ENE	NNE	NNW	N			NW						W	SW	NNW	
19		1	0								1		2	2	2			4	2		2			
		SW	SW								NNW		N	NNW	NNW			SW	SSW		ESE			
20									1										4	4	2			
									SSW										SSW	SW	SSW			
21	1	2		0	1		1		0		2	3	3	4	4				0	2	3	2	2	
	SE	SE		SW	WSW		E		NE		N	NW	NNW	NW	NW				NW	WSW	WSW	WSW	SW	
22	0		0	1	0		0		0	1				2	2					1				
	N		SW	WSW	E		SW		NW	NW				NNE	NNE					SSW				
23	0									1				2	4				3	1	1			1
	SW									ENE				NW	WNW				SW	SW	SW			SSE
24	1	1	1	1		2	1	1	0															
	SE	S	SSE	SW		SSW	SSW	SW	S															
25								0	0		1			0					5	5	4	1		1
								WSW	ESE		SE			NE					SSW	SSW	SSW	SSE		ESE
26	1	3							4										2	3			2	2
	SE	S							SSW										SSE	SE			SE	SSE
27	3	2		1	4	3	2	3											1	0	2			3
	S	SE		E	S	SE	SE	SSW											S	ESE	S			SSW
28	1	4	2	1	3		5																	
	ESE	S	SSE	ESE	ENE		SSW																	
29			3		4	4	4																	
			SSW		SSE	SSW	SSW																	
30																					1	1	1	1
																					NW	NW	NW	NW
31	1									1		1	1	1					1	1				0
	NW									ENE		ESE	ENE	NNE					SSW	SSW				S

(01/06/83-HPI)

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD [illegible]REES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2							1										2	1	1	2			
	SSE							S										W	WSW	SW	SW			
2	0	1	1			0												1	1	2				0
	S	S	SW			SSW												WSW	SW	SW				SW
3			0			0	1	0	1									1	1	1				
			SE			SW	WSW	S	E									W	SW	SW				
4											1							0	1					
											NNE							NNE	SSW					
5										1							3							
										NE							SSW							
6				3															0	1		1	2	
				SSW															WSW	WSW		SE	S	
7	0	0		0	1	1	1	1									3	1	1	1	1	1	0	1
	NNW	SE		E	SSE	S	SE	S									NNW	WNW	WSW	SSE	SSW	SW	SE	SW
8			0	1	1	1	2	0	0									2	1	2	1		0	0
			SSW	SW	WSW	WSW	WSW	SW	S									NW	WSW	SW	SW		SW	SW
9			0	1														2	3					
			SE	SW														WSW	SSW					
10									1									0	2		1			
									E									ESE	S		SW			
11									1									1						
									ESE									WSW						
12		0			1				2									1	2	2	3	4	3	
		SE			SE				E									S	SSE	SE	SE	SSE	SSE	
13	2			1		2	2											1		2	0	1	3	
	ESE			ESE		SE	SSE											SSW		SSE	SSE	SE	S	
14																		2	1	2	3	2	2	1
																		SW	SSW	S	SSW	W	W	WSW
15	2	2	1	1	2	0	1	2	1										4	1	1			
	SW	SSE	SSE	S	SSE	S	S	S	ESE										SSW	SE	SE			
16				3	1													3	4	3	3			1
				SSE	ESE													S	SSE	SSE	SE			SE
17		2	3				2	2																
		ESE	SSE				SSE	S																
18							1	3															0	1
							SSW	W															NW	NW
19	1	1	0		1													3	4	1	1	2		
	NW	NW	NNW		NW													S	S	SSE	ESE	ESE		
20								3	3													1	1	
								SSE	SSE													SW	ESE	
21			1	1	3		2		3									3	3	3	2	1	3	2
			SE	S	SSW		SE		SSW									SSW	SSE	S	SE	ESE	S	SE
22	3	2	1																					
	E	ENE	NE																					
23					2		3	3											5			5	1	0
					SE		S	SSE											SW			SSW	SE	SW
24							4															4	3	3
							S															SSW	SW	SW
25	4	3	2	3	3	3	2	4												2	0	1	0	
	SW	SW	SW	SW	SW	SW	SW	WNW												W	SW	W	SW	
26	1		2	1						0								2	3		4	2	2	
	SW		S	S						ENE								SE	SSE		SSE	SE	SSE	
27			1	3	4	4	2	2	1												3	3	3	
			SSE	S	SSE	SSE	E	ENE	ESE												SSW	SSW	SSW	
28	2			1	1	1		1		0									1		2	0		1
	SSW			ESE	SSW	SSW		SW		NNE									W		WSW	ESE		SE
29	0	0	1	0	0		1		0															
	SW	SE	SSE	SW	WNW		W		ENE															
30	1	1	1	1	2		1		1													2		
	SSE	ESE	SW	SSW	S		SSE		SW													W		

/06/83-HP[illegible])

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS E
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 SSW	2 SSW				0 SSE	2 S												2 S	2 S	2 SE	1 SE	2 S
2	3 SSW	1 ESE	1 SE	2 SSE	2 S	3 SSE															4 SSW	5 SW	5 SW	
3		4 SW	4 SW	3 SSW	3 SSW	0 S			2 SSW									2 S						0 SW
4			1 SSE							1 ESE								2 SE	2 SE	1 E	0 NNE	1 WNW		0 ESE
5	1 SSE	1 SSE	1 SE				0 SSE	1 SSE	0 E								3 SSW	3 SSW		1 ESE	2 SE	2 SSE		
6		2 SE							2 E									3 S	3 S	3 S		2 SSE	1 ESE	
7	2 SSE						2 SE			1 ENE							3 SSW						
8		1 SE		1 S						1 E													3 SE	
9					3 SSE												2 SE	4 SSE	3 SSE					
10				1 ESE	1 SE	0 SE	1 S	1 WSW	1 SSE								4 S	4 S	2 S		3 SSE		3 SSE	4 S
11	4 S	5 S			2 W	3 S		1 ESE	1 ESE										0 SW	1 S	0 NW	1 WSW	1 SSW	1 S
12		1 SSE		1 ESE	1 SSE		0 SSW	1 SSW										1 SSW					2 S	
13	0 SE		1 WNW			2 SW												1 WNW	1 SW	1 SW	1 SSW	0 SW	1 SSW	1 S
14		1 WSW	1 E	2 SE	1 SE	3 SSW													4 SW	3 SSW			4 SSW	
15																							3 NNE	3 NNE
16	1 NNE		1 NNE	1 NNE				1 NNE	1 NNE	1 E	1 NE										1 NW			
17				2 W		0 ENE												2 SSW						
18									2 ESE	1 E							3 S	2 SE	1 SE	1 SSE	2 ESE	2 SE	3 SSW	
19			1 S																			1 SSE		1 ESE
20		1 SSE																						
21			2 WNW														1 NW	1 NW					1 NW	
22								1 NNW	1 NW	0 ENE													1 NNE	2 NNE
23	1 NNE									1 NNE	1 NNE							1 SSW	3 S					
24								2 ESE	1 SSE															
25				4 SSW	4 S	4 SSW												1 W				3 W	2 WSW	1 WSW
26				1 SSW	1 S	1 SSE	1 SSW	2 SSW	2 S															
27			2 WSW																	3 W	4 W	0 W	2 WSW	
28	2 SW	2 SW	1 SW	2 SW				1 SW	1 SW	1 SW	1 WNW								2 E	1 SE	3 SSW	4 SSW	4 SSW	4 SW
29	3 SW	2 SSW	4 S	4 SSW	3 SSW	4 S	3 SSE	2 ESE	1 SE															
30																			4 WNW	5 WNW				3 WSW
31	2 W		3 W	3 W	3 W	2 WSW	2 W		1 ESE	1 SE	1 SE									2 SE	2 SSE	1 E	1 E	

(01/06/83-API)

MO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD [illegible]GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
JAN 1961
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1			0 SSE	0 SSE				0 NNW	0 WSW									2 SW	2 WSW			1 SW	1 SW	1 SW
2	2 S	2 SSE	1 SSE		1 SE		1 SE	2 SE														2 SSE		
3			1 S	2 SSW				1 SW											3 SSW					
4		1 ESE	2 SE	2 ESE																				
5																								
6						0 WSW			1 ESE	1 E											2 SW	1 SSW		0 S
7	1 SW	2 ESE	1 SE	1 SSW	1 SW	1 SW	0 SW	1 SW	1 SE	1 ESE		1 N											1 SW	1 WSW
8	1 ESE		0 WNW		1 SSW	0 NNW	1 WSW	1 WSW	1 W												1 SSW	0 N	1 E	1 SW
9	0 SSE	1 SSE	0 S	0 NNW	2 WSW	0 SW	1 SSE	0 SSW	0 SW														0 W	
10		1 SW	0 WSW	0 W	0 WSW	0 NNE	0 NNW																	0 W
11	0 ESE	0 W		0 NE					0 SSW	1 E													1 SSW	0 ENE
12	0 SE	1 S	1 W		0 ESE					0 W												1 SW	1 SSE	
13	1 SW	1 SW	1 W	2 WSW	1 WSW	1 SSW	0 WSW		1 SW															
14	0 S	0 SE	0 WSW	1 SW	0 SW	0 S		1 WSW	0 W											0 E	1 E			
15	1 E	1 ESE	1 SE																				1 SW	
16																								
17						1 SSE			2 ESE												1 S	1 SSW		
18			1 WSW	2 SW	1 SSW	1 WSW																		
19								1 SSW																
20	1 ENE		1 SW	1 SW	1 ESE																1 SW	1 SSW	1 SW	1 SW
21				1 SSW		1 SW	0 SE	0 SW													0 S		1 WSW	0 SSE
22		1 SW	0 SSE	1 SW	1 S	1 WSW	0 S															0 SE	1 SW	1 N
23		1 SW		0 SW	0 SE	0 SW	1 SSE	0 SW 2 S	2 ESE											2 SE	2 ESE	2 ESE		
24																								
25																				2 SW		0 ESE	0 WSW	2 WSW
26					0 SW			0 WSW																
27																								
28																								
29																								
30																								
31				2 SW	2 WSW																			

/06/83-HP11

HO[illegible]IND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
4D[illegible]GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
FEB 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																					1 NW	0 NE	0 NW	
2	1 NNW	0 NW	1 NW	0 NNW	1 NW	0 SE	0 NW	1 SE	2 ESE													1 ESE	1 SE	
3	2 ESE	2 ESE	2 ESE	2 ESE	2 SE	2 SE	0 SE	0 ESE	0 ESE															0 WSW
4	1 SW	0 WNW			0 S																			
5	0 SE	1 WSW		0 SSW	0 SE	0 W	1 SW		0 SW															1 ENE
6		1 ESE	1 SE	1 ESE	2 E																2 SW			
7	1 SW	0 SW	0 SW	1 SSW	0 ESE		1 SW	0 SSW	0 E											2 SSW	1 SSW	1 SSW	0 S	2 SSW
8	1 SW																							
9																								
10																				1 S	2 S		3 SSE	2 SE
11																								
12							2 SSE															1 SE	1 ESE	1 E
13	0 ESE		2 E	1 SE	2 S	1 SE	2 SE	2 ESE														2 ESE	2 E	
14							1 NE																	
15							1 SW															1 SSW		
16					1 SW	1 SSW	1 SSE	1 WSW													1 ESE	2 SE	2 SE	2 ESE
17	1 ESE	2 ESE		1 ESE	2 SE																			
18		0 SW				1 S	2 S	1 SW	1 SE													0 E		2 SE
19	1 SE						1 E	2 ESE																
20																								
21																					1 SW			0 SW
22		1 SW	1 WSW			0 SSW	0 WSW													2 SW		1 E	1 ESE	1 ESE
23		1 E	2 ESE	2 ESE	2 SE	2 ESE		1 E	1 E												2 SE		2 ESE	2 ESE
24	2 ESE	2 SE	1 ESE	2 SE	1 ESE																			
25	2 ESE					3 SSE	3 S																	
26																								
27																				2 WSW	2 SW	2 SW		
28	1 SW	1 SSE					2 SE													2 SW				

(01/06/83-RPI)

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
MAR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		0 SW	1 WSW	0 SSE	2 SW		0 SW	0 SSE																
2																								
3						1 SW	1 SSW	1 WNW																
4																						2 SW	1 SSW	1 SW
5	0 SSW	1 ESE	1 S	2 ESE	2 ESE		2 ESE	2 ESE																
6	2 SSE															3 WSW		2 SSW	2 SSW					
7																								
8		0 SSE			0 SSW	0 SSE	2 SW	0 SSE	0 ESE	1 ESE														
9		0 SE	0 ESE		0 WSW	1 SSE		0 W													2 S	1 SSW	1 SW	0 W
10		1 ESE			1 SSW		1 W	1 W															0 ESE	
11	1 SW	0 ENE				1 WSW																		
12																				2 SSW			0 SW	1 S
13	2 SW		2 ESE	2 SE	2 SE	0 S	2 SE	2 ESE															1 S	0 S
14	0 S	0 SE	1 SW			0 W																		
15				1 SSW			0 S	0 WSW												3 SW	0 SE	1 ESE	0 ENE	2 SE
16		2 ESE	2 SE			3 SE																		
17																								
18																								
19																								
20																						1 SW		
21																					1 SW	1 SSW		1 SW
22	1 SSE	1 SW	2 ESE	2 SE	0 SSW	0 SW																		
23						0 S															1 SSW	0 SW	1 SW	1 ESE
24	1 WNW	1 WSW																			2 SSW	1 S	2 S	1 ESE
25	1 ESE	2 ESE	2 SE	2 ESE	2 ESE	2 SE	2 ESE	2 E																
26																								
27																								
28																								
29			0 SSE																					
30																						1 SSE		
31		2 SSE	2 SSE	2 SSE	3 SSE	3 SSE	2 SSE																	

/06/83-HP11

M[illegible] WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
[illegible] DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
APR 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		2 E																						
2																						3 SE	2 ESE	3 SSE
3																								
4																								
5	1 SW	1 SSW		0 SW	0 SW	0 E	2 ESE	2 E															1 SSW	1 S
6																								
7						1 S	1 WNW														3 WNW			
8																								
9		2 SSE	2 S																			3 SW		1 SSW
10		3 S					2 E																	
11				0 N																				3 S
12																				3 SW			2 SSW	
13					1 SSE																			
14	1 SW	0 S		0 SW	1 SW	1 SW	0 WSW															0 NW	1 WSW	2 WSW
15																					3 SW			
16	2 SSW	2 SSW	3 SSW	1 SSE		2 SE	1 ESE																2 SSW	2 SSW
17	1 ESE	2 ENE	1 ENE	2 E	1 E	2 ENE	2 E																	0 SE
18	0 SSW	1 SE	1 SE	2 SSE	1 S	0 W														3 SW		1 SE	1 WSW	0 NNW
19																								
20	0 WSW		1 WSW				1 SSW																2 SSW	1 SW
21		2 SSW		0 S	1 SSW	2 SSW																		2 WSW
22																								
23	1 SW			1 SSW	1 SW	1 WSW	1 ESE															0 SSE	1 SW	1 SSW
24	1 SW	1 SSW	1 SSW	0 SSE	1 SSW	1 S	1 ESE															1 SW	1 SSW	1 SW
25		1 ENE	1 E	1 ENE	2 E	2 ENE	1 ESE													2 SW	3 SSW	1 SSW	0 W	
26	2 SSW																			3 SSW	3 SSW			
27		2 WSW	0 W	2 SW	0 SSW	0 SSW	0 SE														3 SSW			3 SSW
28			2 W																					
29	0 S		1 S	1 SW	0 SE	1 WSW																		1 SSW
30	1 WSW	1 SW	0 SSE	1 SSW																		2 SW		
																					2 SSE	2 SSE	0 NW	1 WNW

/06/83-HP[illegible]

HOU[illegible]ND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD [illegible]REES AT 10M
WS IN M/S AT 10M

CB-TRACT
TRAILER AA23
MAY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1 WSW	0 SW	1 SSW	1 WSW	0 SW		0 SE																	
2																								
3																								
4																						0 SSW	1 S	0 W
5	0 S		1 SSW	1 SW		2 SSE	0 SE																	
6																								
7							1 SSE														2 SW	1 WSW		
8				1 ESE		0 SE	1 E																	
9																								1 SW
10	1 SW			2 SE	2 ESE	2 SE	1 E																3 SSE	1 S
11																								
12	1 S	1 SE	0 SSW		1 E	0 NNW	0 NNW															1 SW	1 SW	1 SSE
13		1 WSW																						
14	2 ESE	2 ESE	2 ESE	1 ESE		1 SE														2 SSW	2 SW			
15																								
16																								
17																								
18																						3 SW	2 SW	
19				2 E	2 ESE	2 SE																		
20																								
21																								
22		3 SSW	2 SW																					
23																								
24				0 SW	0 SSE	1 SSW	1 E													1 SW			1 S	
25		0 SE	1 SSE	0 SSW		1 SE	1 ESE														1 SSE	2 SSE	2 SSE	
26				1 NW																				
27																								
28																								
29																								1 SW
30	0 SSW		1 SSW		1 SSW	1 SW	0 NW														2 SW	1 SSW	1 SSW	1 WSW
31	1 E																					2 E		

/06/83-HP[1]

F WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
W DEGREES AT 10M
WS IN MPS AT 10M

C8-TRACT
TRAILER AA23
JUNE 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4							1 NE																	0 SE
5	1 S		0 S	1 SW		1 SW	0 NE														1 SE	2 SSE	2 SSE	2 SSW
6	1 S	1 SSE	0 ESE	1 SE	1 SSE	2 ESE	1 E															3 SE		
7		3 SSE		2 S	2 ESE	2 E	1 E															2 SW		2 S
8																						2 SW		
9						1 SW																		
10	2 SW	2 SW	0 W																					
11					2 SW	0 SSW														3 SSW				
12						1 E																		
13																								
14																								
15		0 SSW	1 SE																					
16	0 SE	2 S	2 SW	0 SSW	0 S	0 WSW	0 ENE																	
17					2 SW	1 WNW																		
18					0 S	1 SW	0 ENE	0 NE														2 SW	1 SSW	1 WSW
19	1 W	1 SSW			1 SSW	1 SSW	1 E																	
20			0 SW	1 SW	0 ESE	1 E	1 E															2 SW	1 WSW	
21	2 SW	1 SSE				0 SE	0 E																	
22				0 SW	0 WNW		0 E														2 S	1 SSW	0 SSW	1 SW
23	1 SW	3 S	2 SE	1 ESE		2 ESE	2 E	1 NE																
24	2 SW	1 SSW	0 W	1 WSW		1 SW	0 E																	0 SW
25		0 SW	0 SW	0 SSW		0 WNW	1 W															2 S	0 S	
26																								
27			2 SE	2 E	3 SSE		3 E																	
28						2 ESE	1 SE																	1 ESE
29																								
30																								

/06/83-HPI)

II-I-1

HOU[illegible]ID SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD [illegible]REES AT 10M
WS IN [illegible]PS AT 10M

CB-TRACT
TRAILER AA23
JULY 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 SSE			3 SSE	2 SW																			
2																								
3																								
4					0 SE	0 SSE	1 ENE														2 SSE	2 SSE	0 S	0 W
5	0 S	1 ENE	2 SE	2 SE	1 S		1 E														0 SE	2 ESE	3 SE	2 ESE
6	1 E	1 E	2 ESE	2 ESE	3 SE	3 ESE	2 ESE																2 SSW	2 S
7																								
8																								
9		2 SE		2 ESE	3 SE																			
10				2 SE	2 ESE	2 ESE																	2 SE	1 SSE
11	1 SSE	2 ESE	2 SE	2 SE	2 ESE	2 ESE																		
12		1 SW	1 SE	1 S	1 SSW																			
13																								
14	2 SE	1 SE									2 NNE											2 SW	0 SSW	
15	0 SE		1 SW	0 SSW	0 WSW	0 WSW															1 SSE	2 SSE	1 SSW	0 NW
16	2 ESE	2 ESE	2 SE	2 SE	2 SE	2 SE																		
17																						1 ESE	1 SSE	2 ESE
18	2 ESE	1 SE	2 SSW	1 SSE	1 S	2 S	0 S														0 N			1 SSE
19		1 SW		2 SSW	1 SSW																2 SW	1 WSW		
20	1 SSW	1 SSE	1 SW		1 SSE	0 SW	2 ESE															0 W	2 SW	0 SSE
21			0 SSW	0 SW	1 E	1 ENE	0 E													2 SSW	1 SW		1 SW	2 SSE
22	1 SSW	0 SSW		2 ESE	2 SE	1 ESE	1 SE																1 SSW	
23		1 S	1 ESE	1 ESE	1 W	1 S	0 SSE																	
24	2 SE	2 SE	2 ESE	2 ESE	2 SE	2 SE	2 ESE																	
25																								
26																								
27			2 SSE	1 SW	2 WSW	0 S																2 SSE	1 S	0 SW
28	1 SW	0 SSE	1 ESE	2 SE	1 S	1 S	1 ESE													2 SW	2 SW	0 SSE		
29	0 SSW	1 ESE	1 ESE	2 ESE	1 SE	1 SE	1 SSE																	2 S
30	2 SSW	0 SW	1 E	3 SSW			1 E													3 SSW		3 SSW		
31																								

/06/83-HP(1)

HOURLY WIND SPEED AND WIND DIRECTION FOR ST Y CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
AUG 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4	2	1	1	1		1	0														3	1	0	1
	SSW	SSW	SSW	SSW		SW	SSE														SW	SSW	SW	SW
5	1	2	1	0		0	0															1	1	2
	ESE	SW	S	N		SSW	ESE															S	ENE	ESE
6	1	2	2	2	2	2														2	2	1		0
	W	WSW	WSW	WSW	WSW	SW														SW	SW	SW		W
7	0	0	1	2	1																	1		1
	WSW	S	WSW	WSW	WSW																	SE		SSW
8	0	0	0	1	0	1																		
	S	WNW	S	SE	W	ESE															3	2		
9				2	1	0															S	WNW		
				SW	SSE	S																		
10		2			2																			
		S			S																			1
11	0																							SW
	NW																				1	1		
12					2	1	0														SW	SSW		
					SW	SW	NW																1	1
13	2	2	2	2	2																		S	SE
	SSE	SSE	SSW	SW	S																		2	
14																							SSE	
15					1	1	1	1														1	0	0
					S	SW	E	ESE														SSW	SSW	SW
16		1	0	0																			2	2
		SE	S	SW																			SE	SE
17	1	1	0				1														1	1		1
	SE	SSE	SSW				ESE														S	WSW		SSE
18	1	0	1	1	0	0																		
	SE	SSW	SW	SW	SW	SE															0	0	1	
19	2	1	0	1	1	1	1														ESE	WSW	E	
	S	SSE	ESE	ESE	ESE	SE	SE														1	1		
20					0			1													SSW	SW		
					SW			ENE														2	0	0
21	1	0	1	1	1	2	2	0														SSW	NNE	SSW
	NNW	SE	E	E	ENE	E	E	NE															2	2
22		2	0																				SSW	SSW
		SW	S																		2	1		
23			2	2	0	1		1													SW	ESE		
			SE	ESE	S	E		NE																1
24	1	0		1	1	0	1	2																SSW
	SSW	SSE		SSW	SSE	S	SE	E														2	2	2
25	2	2	2	2	2	1	0	1		1												E	SE	ESE
	ESE	ESE	SE	SE	ESE	SSE	SSW	E		N											0		1	2
26		1	1		0	1	1	1													SE		SE	SSW
		WNW	SSE		SSE	S	WSW	NW															2	1
27	2	1	1			1	0			1													ESE	ESE
	S	WNW	SE			SSW	ESE			N												1	2	1
28		0	0					1														E	SE	SW
		SSW	WSW					ENE												3				
29	1	2																		SSW				
	ESE	SSE																			2	3		
30																					S	SSE		
31				2	3	2	2																	
				SE	SE	ESE	ESE																	

(01/06/83-API)

HC WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD DEGREES AT 10M
WS M/S AT 10M

CB-TRACT
TRAILER AA23
SEPT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2 ESE	2 ESE	2 ESE	2 ESE	2 ESE	2 ESE	2 E	1 E																
2																								
3							2 SE																	
4	1 ESE	0 SE	1 SE	2 SE	2 SE	2 SE	2 ESE													3 SSE	3 S		0 SW	0 NE
5																								
6																								
7																								
8	0 ESE	1 SW					1 ESE	0 E														1 S	1 SSE	1 SE
9	2 SSE	2 SSW	1 SW																					
10	2 SSW					0 S														1 ESE				
11																				1 ESE			1 SSE	1 SW
12	1 SSW			1 SW	0 E	1 SSW	0 WSW	1 E													1 ENE			
13		2 SE	2 SE	2 SE	2 ESE	0 SSE														2 SSE	1 ESE			
14	1 SE	1 S	0 SSW				0 W	1 S	1 SSW													2 SE	1 SSE	
15	1 SSE	1 ESE	1 ESE	0 SSW			0 WSW															3 SSE		
16	1 SW	0 N	0 WNW		1 WSW		1 SW																	1 SW
17								0 SE																
18		1 SW	1 WSW	1 SSW		1 SW		0 NNW	1 NW	1 NW											2 SSW	2 SSW	1 SSW	1 SW 0 ESE
19	1 E	2 E	2 ESE	2 ESE	2 SE			1 E																1 SSW
20																						3 SSE	1 E	
21						2 ESE	2 ESE	1 ESE													1 WSW	2 SE		2 ESE
22				0 NNE		2 SSE	1 SE	1 E												3 SSW	2 SSW	1 SSE	0 E	0 SE
23		0 SSW	1 E	1 S																				
24																								
25																								
26						1 ESE															2 SW	1 SW		
27	0 SE	1 ENE	1 ESE	0 SE	0 SE	2 E	2 ESE	2 E														0 SSW	2 SW	1 SSW
28						1 NE	1 E	0 S																
29	1 SSW																						1 SW	
30				1 NNW																	2 SSW	2 SSW		

/06/83-RP1)

HOURLY WIND SPEED AND WIND DIRECTION FOR ST Y CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
OCT 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1			0 S	0 E					1 NNE										3 SW	0 SSW				
2	1 S	2 SSW																						
3																								
4																								
5		2 ESE																						
6				1 SE	2 ESE	2 ESE	1 SE	1 SE	1 ENE	1 NE											2 S	2 SSW	0 SSW	1 S
7	0 SSE	2 S																	3 SSW	3 SW				2 S
8																								
9																								
10	2 ESE	2 E	2 E																		1 SSW	1 S	1 S	2 ESE
11																								
12																								
13			0 WSW	1 SW				2 ESE																
14																								
15																								
16																								
17																								
18						2 SW	0 SW							1 NW										
19	0 SW			0 SSE		0 S	1 NW	1 E	1 E	1 NNE		2 N								1 ENE		2 E	2 SE	0 SW 2 SE 1 ESE
20	1 E	2 ESE	2 ESE	1 ESE	1 ESE	2 S	1 SSE	1 ESE														1 E	1 SE	
21						0 SW				1 NNW														
22		1 SW				1 WSW		0 ENE													1 SSW	1 SW	0 SSW	
23			0 ESE	0 NNE	0 W	1 SW	1 SSW	1 SSW	1 E													2 SSW	0 S	
24					2 SW																			
25										1 SE														
26			2 ESE	2 ESE	1 E	2 ESE	2 ESE	1 ESE															1 E	
27			1 SE																		2 SE	1 SSE		
28						1 E																		
29				2 ESE																				
30																								
31		1 NW	1 NW	1 NW	0 NW	1 NW	1 NW	1 NW	1 NNW												0 SSW	1 SW	0 NNE	

(01/06/83-RPI)

HC IND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD .GREES AT 10M
WS IN MPS AT 10M

CB-TRACT
TRAILER AA23
NOV 1981
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		1 S	1 WSW		1 W	0 SSE	1 W																	
2				1 SW	0 SE		1 SW	0 W													1 SW	1 SW	0 SE	0 ENE
3	1 SW	1 SW		1 WSW	0 ENE																0 S	0 WSW	1 SSW	1 SW
4	0 S	1 SW	1 W	1 SE	0 SSW	0 SW	1 SW	1 SW	1 E										1 SW	0 SE	1 SSW	1 SW	1 SW	0 ESE
5	0 SE	1 SSW	1 SE	2 SE	1 SSE	1 ESE	1 SE	1 SE	2 E									2 SSW	2 S	1 SE	1 SSE	3 SE	2 ESE	2 ESE
6	1 ESE		1 SSW		2 SSW	1 SSW	2 SSE	1 ESE	1 ESE															
7																								
8	1 SW	0 E																						
9	0 E	0 SSE			1 SW	0 NNW	0 ESE	0 WSW	0 E													0 SW		
10	2 SE	2 SE	1 SE	1 SE	1 SE	2 ESE	1 SE	1 ESE												1 S SSW	1 SSW	1 S	1 S	2 SSE
11	1 S	1 SSW	0 SW	0 SE	1 SW	1 SW	1 SW	1 WSW												2 SSW		S S	0 S	1 S
12	1 SE		2 ESE	2 SSE		2 SE	2 SE	2 ESE											1 SW	0 SE	0 NW	0 SSE	0 S	0 SW	
13		2 SE	2 ESE		2 E																		2 SE	
14																								
15																								
16		1 ESE	2 SE			2 ESE	1 SE	2 SE															2 ESE	1 SE
17					2 ESE	2 ESE																2 SE	2 ESE	
18																								
19				1 NW		0 NW	0 NW	1 NW	1 NNW	1 E														
20	2 SE	2 ESE	2 ESE	2 ESE	1 SE	2 SE	2 SE																2 ESE	3 ESE
21	2 SSW	0 SSE				2 SSW																		2 SW
22																								
23						2 SSE																		
24																								
25																								
26		1 SSE			1 SW	1 SW	0 E	0 SSW																1 ESE
27	0 WSW	0 SSE																		2 SSE				1 WSW
28		0 S	1 S				1 SSW																	3 SSW
29						1 W																	1 ESE	
30						0 SSW		1 SSW																

/06/83-HP(1)

II-175

HOURLY WIND SPEED AND WIND DIRECTION FOR STABILITY CLASS F
WD IN DEGREES AT 10M
WS IN MPS AT 10M

C8-TRACT
TRAILER AA23
DEC 1981
OCCIDENTAL OIL SHALE, INC.

DAY	HOUR (LOCAL STANDARD TIME)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1				2 SSW	1 SSW																			
2																								
3							1 SE	2 SE											0 ESE	2 SE	1 S	0 WSW	1 SW	
4		0 SE		2 SE	2 SE	2 S	1 S	2 SSE	1 SSE															
5																			2 E				1 ESE	2 ESE
6	2 ESE		1 E	2 ESE	2 SE	2 ESE	2 ESE	2 ESE													1 S			2 ESE
7		2 SE	2 SSE	2 ESE	2 SE	2 SE		2 ESE	2 ESE									3 SSW	2 ENE	2 ESE	2 ESE	2 E	1 ESE	2 ESE
8	2 ESE		1 SE		0 SW	1 SW		1 ESE	2 ESE									2 SSW	2 SSE	3 SE	3 SE	3 SE		2 SE
9	2 SSE	2 SE	2 SSE	3 SSE		2 SE	2 SE	2 SE	1 SSE											2 SSE	2 SSE	2 SE	1 E	1 ESE
10																				0 E		3 SSE		
11							2 S																	
12	1 SW		2 SW																					
13																								
14	1 SSW																							
15																								
16		2 NNE			2 NNE	2 NNE	1 NNE																	
17																			0 ESE	1 E	1 ESE	2 E	2 E	2 ESE
18	2 ESE	2 ESE	2 ESE	2 ESE	2 SE	2 ESE	2 ESE	3 ESE																
19																								
20																								
21																								
22																								
23		0 NNE	1 NNE	0 NNE	1 NNE	0 NNE	1 NNE	1 NNE	1 NNE											2 SSW	1 SW	0 S	1 S	1 SE
24	2 ESE	2 ESE	1 ESE	0 E	2 ESE	1 ESE	2 ESE																	
25																								
26																								
27																								2 SW
28					3 SW	2 SW	1 SW																	
29																								
30																								
31								2 SW																1 W

(01/06/83-APP1)

May

Inversion Studies

Tethersonde Soundings

Air Quality Assurance

Data Reports

2.3.6 Inversion Studies

No temperature inversion heights are being measured during the Interim Monitoring Period.

May

Tethersonde Soundings

Air Quality Assurance

Data Reports

2.3.7 Tethersonde Soundings

No additional studies were conducted during this time period.

May

Air Quality Assurance

Data Reports

2.3.8 Air Quality Assurance

2.3.8.1 Quality Assurance Program

The quality assurance program and procedures have been documented in Air Monitoring Quality Assurance Manual and Standard Operating Procedures, Cathedral Bluffs Shale Oil Co., August 1981. This document was submitted in August 1981 to EPA, Region VIII for approval. Copies were also sent to the Oil Shale Office and the Colorado State Department of Health.

These quality assurance procedures define requirements for instrument selection, installation, calibration, maintenance and auditing in accordance with regulations of the Clean Air Act. These procedures are followed by on-site personnel regarding air monitoring equipment. Copies of the quality assurance manual are retained in each air quality trailer for easy reference; these include standard forms for recording calibrations, repairs and data problems.

2.3.8.2 Station "Up-Time" Summaries

For this operational period air quality station AB23 and the co-located 60-m meteorological tower (AA23) have been in continuous operation. Monthly summaries of data acquisition instrument efficiencies (or "up-time") have been included in each air data report. These monthly efficiencies are summarized by instrument or channel on Table 2.3.8-1 for 1982.

2.3.8.3 Air Quality Audit Summaries

Air quality audits have been conducted by either an independent consultant or by CB Environmental Services' Grand Junction Office at Station AB23 since 1976 and are reported on Table 2.3.8-1. In addition, Station AB20 audits began in May 1981, while Station AB26 audits began December 1981. Audit performance goals for the instruments are to achieve values of β within + 10% of unity where

$$C_2 = \beta C_1 + \alpha$$

C_2 = Concentration of gas obtained by audit service
C_1 = Concentration of gas obtained by station calibration
β = Constant = Linear slope of regression line
α = Constant = C_2 intercept of regression line

Thus a β of 1.0 and an α of 0.0 indicate perfect agreement between station and the audit.

In addition, in December 1981 a systems audit was conducted by EPA, Region VIII's independent contractor. Audit recommendations and actions taken by CB were reported in the previous data report.

TABLE 2.3.8-1

Instrument "Up-Time" - Sta. AB23, AA23 - 1982

Channel	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
NO_x	56	44	74	88	88	94	97	95	97	100	90	97
NO	56	44	74	88	88	94	97	95	97	100	90	97
NO_2	56	44	74	88	88	94	97	95	97	100	90	97
O_3	84	95	15	90	88	94	97	95	100	100	98	97
CO	98	97	91	89	87	91	97	82	99	100	97	97
SO_2	96	97	90	79	88	94	97	92	98	99	98	97
H_2S	93	97	80	76	88	94	97	92	98	99	98	97
TSP	100	100	100	100	100	100	100	100	100	100	100	100
Wind Speed 10m	98	97	87	90	88	94	97	98	100	100	95	97
30m	98	97	87	90	88	94	97	98	100	100	95	97
60m	98	97	87	90	88	94	97	98	100	100	95	97
Wind Direction 10m	98	97	87	90	88	94	97	98	100	100	95	97
30m	98	97	87	90	88	94	97	98	100	100	95	97
60m	98	97	87	90	88	94	97	98	100	100	95	97
Sigma Wind Dir. 10m	98	97	87	90	88	94	97	98	100	100	95	97
30m	98	97	87	90	88	94	97	98	100	100	95	97
60m	98	97	87	90	88	94	97	98	100	100	95	97
Temperature 10m	98	97	87	90	88	94	97	98	100	100	95	97
30m	98	97	87	90	88	94	97	98	100	100	95	97
60m	98	97	87	90	88	94	97	98	100	100	95	97
Delta Temperature	98	97	87	90	88	94	97	98	100	100	95	97
Relative Humidity	88	91	79	87	78	100	97	99	98	93	100	100
Solar Radiation	98	97	91	90	88	94	97	98	100	100	98	26
Barometric Pressure	98	78	0	0	40	94	97	98	100	100	98	97
Precipitation	88	89	94	100	78	91	88	100	100	53	100	100

TABLE 2.3.8-2 AIR QUALITY AUDIT RESULTS AT C-b TRACT

STATION	INSTRUMENT	(1) β Value														
		12/2/76	4/20/77	8/23/77	11/30/77	3/20/78	6/23/78	9/22/78	12/15/78	3/28/79	6/20/79	9/25/79	12/13/79	3/27/80	6/17/80	5/4/81
AB23	NO	1.370	0.949	1.383	-	1.022	0.942	0.920	0.825	0.809	1.013	0.911	0.971	0.960	1.055	0.985
	NOx	1.250	0.896	1.202	-	0.975	0.912	0.898	0.865	0.768	1.013	0.984	0.962	0.941	1.010	0.948
	NO_2									0.845	1.075	-	0.999	1.042	1.094	1.011
	SO_2	0.989	1.847	0.983	0.992	1.018	1.002	1.088	0.937	0.971	-	1.079	0.918	0.939	1.154	0.919
	H_2S	-	1.715	-	-	1.068	1.020	1.150	0.969	0.952	-	1.064	0.952	0.965	1.359	-
	CO	-	0.974	-	-	1.006	0.953	0.964	1.038	1.062	1.081	1.170	0.939	0.964	1.148	0.910
	O_3	0.917	0.872	0.927	0.932	1.202	0.816	0.831	0.898	0.798	0.924	0.799	0.955	0.866	0.816	1.199
AB20	NO															1.019
	NO_x															0.944
	NO_2															1.025
	SO_2															0.901
	CO															1.007
	O_3															1.010
Audit Agency (4)		NAR														

$C_2 = \beta C_1 + \alpha$ - = Not Calibrated $^{(1)}\beta$ = Linear slope of C_2 vs C_1 line

Where C_2 = Concentration of gas obtained by audit service

C_1 = Concentration of gas obtained by station calibration

STATION	INSTRUMENT	(1) β Value															
		12/28/81	4/1/82	6/15/82	9/28/82	12/12/82											
AB23	NO	1.040	0.974	1.002	1.026	0.995											
	NO_x	1.031	0.980	1.041	1.043	0.995											
	NO_2	(2)	1.023	0.968	0.996	0.987											
	SO_2	0.974	0.998	0.931	0.972	0.893											
	H_2S	Down	1.033	1.007	(5)	(5)											
	CO	0.982	0.974	0.977	1.005	1.022											
	O_3	0.993	0.999	0.976	0.961	0.970											
AB20	NO	Down	(3)	(3)	(3)	(3)											
	NO_x	Down															
	NO_2	Down															
	SO_2	0.942															
	CO	1.005															
	O_3	1.019															
AB26	NO	0.962	0.964	1.017	(3)	(3)											
	NO_x	0.957	0.965	1.042													
	NO_2	(2)	0.979	1.020													
	SO_2	0.989	1.082	0.993													
	H_2S	0.971	1.017	1.039													
	CO	1.049	0.975	1.042													
	O_3	1.022	0.878	0.917													
Audit Agency (4)		CB E/S	CB E/S	CB E/S	APCD	NAR											

(2) Malfunction of gas phase titration channel of the audit device.
(3) Station discontinued.
(4) NAR = North American Rockwell, EPA Contractor
APCD = Colorado Air Pollution Control Division
CB E/S = Cathedral Bluffs Environmental Services Department, Grand Junction
(5) Not Audited.

2.3.8.4 Air Quality Precision Checks

The procedures followed for precision calculations were set forth in the CB Quality Assurance Manual and are identical to those contained in Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/4-80-012, November 1980. The precision probability limits and percentage differences for both gases (automated analyzers) and particulates (manual hi-vol analyzer) are presented in Table 2.3.8-3 for the July - September 1982 quarter.

TABLE 2.3.8-3

Single Analyzer Precision - C-b Tract

Station AB23 — Time Period - July-September 1982

Gas	Instrument	No. of Paired Samples	Mean Difference, $\bar{d}_j$ (%)	Standard Deviation S_j (%)	Upper 95% Limit (%)	Lower 95% Limit (%)	Automated (A) or Manual (M)
SO_2	Teco 43 P.F.	5	4.8	7.5	19.5	-9.8	A
NO_2	ML8840E C	5	4.4	2.3	8.8	-0.1	A
O_3	Dasibi 1003RS UV	5	-2.1	3.0	3.8	-8.0	A
CO	Beckman 866 IR	5	2.1	2.4	6.8	2.7	A
H_2S	Teco 45 PF	5	-1.3	3.3	5.2	-7.7	A
TSP	Hi-vol	6	-2.7	9.6	21.2	-32.2	M

P.F. = Pulsed Fluorescence
C = Chemiluminescence
IR = Infrared
UV = Ultraviolet Absorption

May

Data Reports

2.3.9 Data Reports

This section includes monthly data reports for May 1982 through December 1982, as requird by the Interim Monitoring Plan.


May

LIST OF TABLES

LIST OF TABLES (Contd)

NITRIC OXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	1	( )	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	9	1	0	0	0	0	0	0	1	1	9
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	11	0	0	0	1	11
4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	5
5	11	0	0	0	0	0	0	7	6	1	0	0	4	0	2	7	6	5	1	0	0	0	0	0	2	11
6	0	0	0	0	0	0	0	0	1	2	0	4	2	1	1	1	2	2	10	7	0	0	0	0	1	10
7	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	2	2	0	1	0	0	0	2
8	0	9	0	0	0	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	0	0	0	0	1	5
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	4	0	0	0	0	0	18	5	9	2	0	5	0	3	18
13	18	40	37	21	21	7	0	(PF)	(PF)	6	1	0	0	0	0	0	0	0	0	0	5	0	0	0	7	40
14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
15	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16	0	0	0	0	0	0	0	1	0	1	2	1	1	4	0	0	0	0	0	0	0	0	0	0	0	4
17	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	1	4	1	2	1	4
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	( )	2
19	2	2	1	1	4	1	5	4	1	1	1	1	1	1	1	1	1	2	5	6	11	1	1	2	3	11
20	1	1	1	1	0	1	1	5	2	4	2	4	2	2	4	2	2	1	2	1	1	1	2	2	2	5
21	0	1	1	1	1	1	2	2	2	1	2	2	2	2	2	2	4	1	1	1	1	1	1	2	2	4
22	1	1	1	1	1	1	1	1	2	2	1	1	9	6	1	2	4	2	1	1	1	1	1	2	2	9
23	1	1	1	2	1	1	6	6	5	1	4	5	2	4	5	4	4	1	1	1	2	1	1	2	3	6
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	1	6	1	1	1	1	1	2	( )	6
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	4	4	2	5	4	5	9	11	6	6	17	1	1	6	10	6	17
26	5	1	2	2	1	1	2	1	2	1	2	2	2	5	4	1	1	1	1	1	1	1	1	2	2	5
27	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	2	1	2
28	1	1	2	1	4	7	13	11	5	2	2	2	2	1	1	1	5	11	16	23	20	1	1	2	6	23
29	1	1	1	1	1	4	2	1	1	2	2	1	2	1	1	2	1	1	1	1	4	10	1	2	2	10
30	4	1	11	1	1	1	2	7	1	4	5	11	2	7	7	1	1	1	4	6	2	1	1	2	4	11
31	1	1	1	1	1	1	2	1	2	1	2	2	1	1	4	2	2	1	2	5	1	2	1	2	2	5
AV	2	3	2	1	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2	3	2	1	1	2	2	
PK	18	40	37	21	21	7	13	11	6	6	5	11	9	7	7	9	11	18	16	23	20	10	6	10		40

OXIDES OF NITROGEN
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	8	11	6	4	( )	11
2	6	4	4	4	4	6	4	6	4	8	6	6	9	17	19	28	11	6	4	4	6	4	4	4	7	28
3	6	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	2	2	21	36	4	2	2	6	36
4	4	4	6	4	4	4	4	4	2	2	4	8	4	2	2	2	2	4	4	2	4	4	6	21	4	21
5	60	6	4	4	4	4	4	23	23	8	11	13	15	2	11	30	24	19	8	4	6	4	4	4	12	60
6	4	4	6	4	6	9	6	6	11	11	6	15	15	9	11	9	13	11	38	26	2	4	4	2	10	38
7	4	2	4	4	8	4	4	6	8	6	15	6	4	6	4	4	8	6	9	9	4	8	2	4	6	15
8	4	28	8	4	2	17	6	4	4	4	2	4	4	4	4	2	4	2	2	2	2	4	2	2	5	28
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	4	4	2	( )	4
10	2	4	4	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4	2	4
11	8	2	4	2	4	8	4	9	4	4	2	2	2	2	4	2	2	21	21	21	4	8	4	2	6	21
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	17	4	4	4	2	4	53	19	30	13	2	21	4	13	53
13	77	105	94	56	60	26	4	(PF)	(PF)	21	6	4	4	4	4	4	4	4	6	4	23	2	6	2	24	105
14	15	6	2	4	4	2	2	8	8	8	6	4	4	4	4	4	2	2	2	4	4	4	4	6	4	15
15	9	4	2	4	2	9	11	8	9	4	9	6	2	4	9	6	6	4	8	4	4	4	4	6	6	11
16	4	4	6	4	6	6	6	9	6	9	13	9	11	17	4	4	4	4	4	2	4	2	2	4	6	17
17	4	4	2	6	6	4	4	4	4	6	2	2	2	6	2	4	2	2	2	2	2	11	4	6	4	11
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	6	4	4	( )	6
19	8	8	6	4	13	2	13	11	6	2	2	2	2	4	4	2	2	4	17	21	34	6	4	2	7	34
20	4	8	2	2	4	2	4	13	8	8	6	9	6	6	9	8	8	6	8	2	4	2	13	6	6	13
21	4	4	4	4	4	2	8	8	8	4	6	6	6	6	6	4	9	4	4	4	4	2	4	2	5	9
22	6	6	4	2	9	6	2	4	9	6	4	4	26	15	4	6	11	4	4	4	4	2	4	4	6	26
23	4	4	4	13	4	4	15	19	11	4	8	11	8	9	15	9	11	2	2	6	8	6	2	2	7	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	4	15	4	4	2	2	2	2	( )	15
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	9	13	6	13	9	15	24	34	17	21	45	2	2	15	30	16	45
26	13	4	9	9	6	2	6	4	9	6	8	8	6	13	9	2	4	4	2	2	2	2	2	2	5	13
27	4	2	2	2	4	2	4	4	2	4	4	4	4	4	4	4	4	2	4	4	4	4	4	4	3	4
28	4	4	4	4	8	21	36	34	15	9	9	9	6	4	4	2	15	32	49	58	53	4	4	4	16	58
29	15	4	4	4	4	15	8	4	4	6	4	2	4	4	4	4	4	4	2	2	13	28	6	8	6	28
30	15	6	32	4	4	4	8	19	4	8	15	30	8	23	21	2	4	2	13	19	2	4	4	2	10	32
31	4	2	8	2	4	2	4	2	6	4	6	4	2	4	9	6	2	2	4	15	2	8	2	2	4	15
AV	11	9	9	6	7	7	7	9	7	6	6	7	6	7	7	7	7	8	9	11	8	5	5	5	8	
PK	77	105	94	56	60	26	36	34	23	21	15	30	26	23	21	30	34	53	49	58	53	28	21	30		105

NITROGEN DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	8	11	6	2	( )	11
2	6	4	4	4	4	6	4	6	4	8	6	6	9	11	13	15	9	6	4	4	6	4	4	2	6	15
3	6	6	6	4	6	4	4	4	4	4	4	4	4	4	4	4	4	2	2	11	19	4	2	2	5	19
4	4	4	6	4	4	4	4	4	2	2	4	6	4	2	2	2	2	4	4	2	4	4	6	13	4	13
5	43	6	4	4	4	4	4	11	13	6	11	13	9	2	8	19	15	11	6	4	6	4	4	4	9	43
6	4	4	6	4	6	9	6	6	9	8	6	9	11	8	9	8	9	8	23	15	2	4	4	2	7	23
7	4	2	4	4	8	4	4	6	8	6	11	4	4	6	4	4	8	6	6	6	4	6	2	4	5	11
8	4	15	8	4	2	9	4	2	4	4	2	4	4	4	4	2	4	2	2	2	2	4	2	2	4	15
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	2	2	4	4	2	( )	4
10	2	4	4	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4	2	4
11	8	2	4	2	4	8	4	9	4	4	2	2	2	2	4	2	2	13	13	15	4	8	4	2	5	15
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	11	4	4	4	2	4	24	11	17	9	2	13	4	8	24
13	49	43	38	24	28	15	4	(PF)	(PF)	11	4	4	4	4	4	4	4	4	6	4	15	2	6	2	13	49
14	13	4	2	4	4	2	2	8	8	8	6	4	4	4	4	4	2	2	2	4	4	4	4	2	4	13
15	8	4	2	4	2	9	9	8	8	4	8	6	2	4	8	6	6	4	8	4	4	4	4	6	5	9
16	4	4	6	4	6	6	6	8	6	8	9	8	9	11	4	4	4	4	4	2	4	2	2	4	5	11
17	4	4	2	6	6	4	4	4	4	6	2	0	0	2	0	2	0	0	0	0	0	6	2	2	2	6
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	4	2	0	( )	4
19	4	4	4	2	8	0	6	6	4	0	0	0	0	2	2	4	4	4	4	0	2	0	9	2	3	9
20	2	6	0	0	4	0	2	6	4	2	2	4	2	2	4	4	4	4	4	0	2	0	9	2	3	9
21	4	2	2	2	2	0	4	4	4	2	2	2	2	2	2	0	4	2	2	2	2	0	2	0	2	4
22	4	4	2	0	8	4	0	2	6	2	2	2	13	6	2	2	6	0	2	2	2	0	2	0	3	13
23	2	2	2	9	2	2	6	9	4	2	2	4	4	4	8	4	6	0	0	4	4	4	0	0	3	9
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	2	6	2	2	0	0	0	0	( )	6
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	4	8	2	6	4	8	11	17	8	11	19	0	0	6	15	7	19
26	6	2	6	6	4	0	2	2	6	4	4	4	2	6	4	0	2	2	0	0	0	0	0	0	2	6
27	2	0	0	0	2	0	2	2	0	2	2	2	2	2	2	2	2	0	2	2	2	0	2	0	1	2
28	2	2	0	2	2	9	15	17	8	6	6	6	2	2	2	0	8	15	24	23	23	2	2	0	7	24
29	13	2	2	2	2	9	4	2	2	2	0	0	0	2	2	0	2	2	0	0	8	13	4	4	3	13
30	9	4	15	2	2	2	4	8	2	2	8	13	4	11	9	0	2	0	8	9	0	2	2	0	5	15
31	2	0	6	0	2	0	0	0	2	2	2	0	0	2	4	2	0	0	0	8	0	4	0	0	1	8
AV	8	5	5	4	5	4	4	6	5	4	4	4	4	4	4	4	4	4	5	6	5	3	3	2	5	
PK	49	43	38	24	28	15	15	17	13	11	11	13	13	11	13	19	17	24	24	23	23	13	13	15		49

OZONE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	71	65	63	65	65	( )	71
2	61	57	63	67	63	59	51	53	67	71	76	78	78	73	71	61	63	65	53	51	55	63	61	61	63	78
3	65	69	69	63	63	59	55	59	61	63	63	67	73	74	74	73	71	71	73	65	51	59	69	65	65	74
4	51	53	51	47	47	49	45	53	63	65	69	73	73	73	71	65	63	63	55	57	55	53	47	63	58	73
5	45	71	65	67	73	69	67	61	69	118	90	98	96	104	104	96	92	80	84	82	73	74	74	74	80	118
6	67	69	67	74	71	69	63	71	88	90	92	90	90	96	96	98	98	98	84	82	80	80	76	76	82	98
7	76	80	78	71	69	69	63	61	73	78	74	78	76	74	76	71	71	71	65	57	51	47	49	53	68	80
8	47	47	59	57	69	63	59	61	65	78	80	86	98	98	94	92	92	92	88	88	88	84	86	86	77	98
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	82	84	80	69	76	71	69	( )	84
10	65	69	61	73	73	61	65	74	80	84	88	92	92	92	90	88	86	88	84	84	80	69	65	63	78	92
11	51	47	49	43	39	55	47	55	63	71	82	84	86	86	86	86	88	76	73	61	69	57	47	43	64	88
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	49	53	57	61	63	67	73	61	76	71	76	78	67	71	66	78
13	37	33	37	51	51	61	65	(PF)	(PF)	61	65	69	74	76	82	80	78	76	73	71	59	53	43	51	61	82
14	53	51	51	51	49	49	47	61	67	69	73	78	80	78	76	80	78	74	69	63	61	61	55	55	64	80
15	59	55	53	55	57	49	43	53	63	78	84	88	92	90	90	90	94	90	86	76	59	65	65	63	71	94
16	63	65	63	65	49	49	45	57	73	82	86	90	92	86	82	82	86	84	82	74	57	53	53	53	70	92
17	53	49	51	45	47	47	49	51	74	86	86	88	86	86	84	90	92	84	82	78	76	63	73	76	71	92
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	88	78	78	74	74	( )	88
19	69	65	69	59	47	59	51	65	88	106	112	112	118	122	137	135	129	118	102	92	80	84	80	74	90	137
20	74	73	51	51	55	51	61	61	67	67	82	82	90	96	96	102	102	102	90	86	74	78	71	82	77	102
21	82	84	88	82	74	67	63	71	80	94	94	88	92	92	94	96	88	88	86	82	73	73	73	69	82	96
22	69	69	69	71	67	69	65	63	69	82	98	104	92	94	96	98	96	96	100	84	78	76	82	80	82	104
23	78	82	76	73	74	78	59	67	76	80	86	90	96	96	94	98	106	104	104	94	73	80	80	80	84	106
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	73	73	71	74	73	80	80	76	73	( )	80
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	106	102	96	98	92	92	88	80	78	84	78	69	73	76	71	61	84	106
26	63	63	63	61	65	71	53	65	76	80	84	80	82	82	84	86	86	88	86	80	82	84	86	82	76	88
27	73	78	80	80	74	71	76	74	74	73	74	78	84	82	80	80	80	80	78	71	73	69	69	69	76	84
28	63	65	63	61	55	57	65	76	94	98	96	92	90	98	106	106	98	82	78	73	69	78	78	78	80	106
29	59	65	67	69	76	59	53	71	82	86	98	100	102	100	102	102	100	96	90	82	82	84	88	80	83	102
30	73	76	71	71	65	65	63	65	78	78	76	71	78	82	71	80	82	84	82	76	73	71	69	65	74	84
31	65	67	61	67	59	45	45	47	49	71	80	94	92	90	88	90	90	90	90	76	71	67	74	82	73	94
AV	62	64	63	63	61	60	57	62	74	81	83	85	87	88	88	87	87	84	81	75	70	70	69	69	74	
PK	82	84	88	82	76	78	76	76	106	118	112	112	118	122	137	135	129	118	104	94	88	84	88	86		137

CARBON MONOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	43	100
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	0	0	0	100	0	0	0	0	24	100
5	100	100	100	100	100	100	100	100	100	100	100	0	100	0	0	0	0	0	0	0	0	0	0	0	57	100
6	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	100	100	100	100	29	100
7	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	77	100
8	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	0	29	100
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	0	0	0	0	0	0	0	43	100
11	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0	0	100	100	0	0	0	0	0	19	100
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	100	100	100	100	100	100	100	0	0	0	0	57	100
13	0	0	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	1	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	100	0	0	0	34	100
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
19	0	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	43	100
20	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100	0	100	0	0	0	0	19	100
21	0	0	0	0	100	0	100	0	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	38	100
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	100	0	0	0	0	19	100
23	0	100	100	100	100	100	100	100	100	0	0	0	0	0	100	0	0	100	100	100	0	0	100	100	67	100
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	300	600	200	200	200	( )	600
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	43	100
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	100	100	100	100	0	0	0	0	29	100
27	0	100	100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	38	100
28	0	0	0	0	0	0	0	100	100	100	100	0	0	0	0	0	100	100	100	100	0	0	0	0	38	100
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	10	100
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	14	28	28	28	32	28	32	37	36	37	35	18	22	35	43	33	29	37	29	45	30	11	19	19	28	
PK	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	300	600	200	200	200		600

SULFUR DIOXIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	0	3	3	3	0	3	0	3	3	1	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
5	0	0	0	0	0	0	0	0	0	0	(CA)	0	0	0	3	3	3	0	0	0	0	0	0	0	0	3
6	0	0	0	0	0	0	0	0	0	0	0	0	16	3	3	3	0	0	3	0	0	0	0	0	1	16
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	(MT)	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	0	3	0	0	0	0	0	0	0	0	3
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	( )	0
20	0	0	0	0	0	0	0	0	0	5	3	3	3	3	5	3	3	3	3	0	0	0	0	0	0	3
21	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	3	3	0	0	0	0	0	0	0	1	5
22	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	3
23	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	3
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(MT)	3	5	3	3	5	5	5	8	3	3	10	0	0	0	3	( )	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	10
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	5	8	8	0	0	0	1	8
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	
PK	0	0	0	0	0	0	0	3	0	5	5	3	16	5	5	5	8	3	5	10	8	0	3	3		16

HYDROGEN SULFIDE
(UG/M3)

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	( )	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	(CA)	1	1	1	1	0	0	0	0	0	1	1	0	0	0	1
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	1	4	3	3	3	3	3	3	1	1	1	1	1	0	1	4
8	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	( )	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	(MT)	1	0	0	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	(PF)	(PF)	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	1	1	1	1	0	1	1	1	3
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	3	1	0	( )	3
19	0	0	0	0	0	1	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	1	1
20	0	0	0	0	0	1	1	1	1	0	3	3	3	1	1	1	0	1	0	0	0	0	0	0	1	3
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0	0	0	0	0
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(MT)	1	3	1	0	1	1	1	1	4	4	4	3	3	3	3	2	4
26	1	1	0	0	0	0	1	1	1	1	1	1	1	3	1	1	1	0	0	0	0	0	0	0	1	3
27	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AV	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
PK	1	1	0	0	1	1	1	1	1	4	3	4	3	3	3	3	3	4	4	4	3	3	3	3		4

PARTICULATE DATA
UG/M3

C-B TRACT
MAY 1982
OCCIDENTAL OIL SHALE, INC.

DAY	STATION AB20	AB23	AB26	AD42	AD56
3	( )	12.5	9.7	( )	( )
7	( )	10.9	11.2	( )	( )
11	( )	11.8	49	( )	( )
15	( )	5.4	( )	( )	( )
19	( )	15.1	16.2	( )	( )
23	( )	15.7	23.5	( )	( )
27	( )	18.4	14.8	( )	( )
31	( )	25.6	19.4	( )	( )
AVE	( )	14.4	20.5	( )	( )
GM	( )	13.3	17.9	( )	( )
PEAK	( )	25.6	49	( )	( )

WIND SPEED @ 10M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	1	1	2	2	( )	3
2	2	1	1	3	2	2	2	2	1	1	1	0	2	3	3	4	1	0	1	2	2	2	2	2	2	4
3	3	4	2	3	2	2	2	3	4	5	5	7	7	7	7	6	5	7	6	4	2	3	4	3	4	7
4	3	3	2	2	1	1	1	1	4	3	4	4	4	4	5	3	4	3	1	1	1	1	3	2	3	5
5	1	2	2	2	3	2	2	3	4	5	6	5	4	4	4	6	5	4	4	2	0	1	(CM)	1	3	6
6	2	1	0	0	0	0	(CM)	1	1	2	2	4	4	4	4	4	4	4	4	1	2	2	1	1	2	4
7	1	0	1	2	0	1	0	(CM)	0	2	3	4	4	4	6	5	3	5	2	2	2	1	2	3	2	6
8	1	2	3	4	5	2	2	3	4	6	6	7	7	7	8	9	9	8	6	6	4	4	7	4	5	9
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	7	5	1	3	4	4	( )	7
10	4	4	1	7	3	2	3	7	8	6	7	7	8	7	7	6	6	4	4	3	0	0	1	1	4	8
11	0	1	1	0	0	1	1	0	1	1	5	4	3	5	1	4	3	2	3	2	2	(CM)	1	1	2	5
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	3	2	2	2	3	3	4	5	5	3	3	5	5	3	5
13	5	4	4	5	6	6	4	(PF)	(PF)	5	4	5	4	5	5	4	3	4	3	2	2	1	1	3	4	6
14	3	2	3	2	2	1	1	1	1	1	3	2	1	1	2	0	2	1	1	2	2	1	1	0	2	3
15	1	1	1	0	0	0	(CM)	(CM)	1	1	2	3	2	4	2	3	2	2	2	1	2	0	1	0	1	4
16	1	0	1	1	1	0	(CM)	1	1	2	3	3	4	3	7	4	2	4	2	1	1	2	2	2	2	7
17	1	(CM)	1	1	0	1	1	1	1	1	4	5	4	3	2	2	4	3	1	2	4	0	0	0	2	5
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	2	1	1	1	1	( )	2
19	1	1	0	0	0	0	2	1	4	6	4	7	4	5	4	3	3	3	4	4	2	3	2	2	3	7
20	1	1	1	1	0	1	1	2	2	2	2	2	2	2	3	2	2	2	2	1	1	2	0	1	2	3
21	1	0	(CM)	1	1	2	(CM)	1	1	1	2	2	2	2	2	2	3	3	3	1	1	1	(CM)	0	2	3
22	0	0	1	1	0	0	0	0	1	1	2	1	3	2	2	3	5	2	0	2	2	3	2	0	2	5
23	2	(CM)	2	1	1	1	1	1	2	4	4	3	3	3	3	3	4	4	2	0	1	0	1	2	2	4
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	1	4	3	2	3	1	1	1	( )	5
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	2	4	5	5	6	6	6	6	5	4	3	2	2	2	4	4	6
26	2	2	0	0	2	1	1	1	1	2	3	2	2	4	2	3	4	5	4	4	4	4	3	3	2	5
27	0	3	5	5	3	1	5	6	5	5	4	5	6	5	8	6	6	6	6	5	6	4	5	4	5	8
28	1	2	3	4	4	4	4	4	3	2	3	3	4	4	5	5	4	4	4	3	3	1	1	0	3	5
29	0	2	3	2	0	1	0	1	1	1	5	5	6	6	5	6	6	4	4	4	2	1	1	1	3	6
30	1	2	3	3	2	3	2	1	1	1	2	4	5	4	4	4	3	2	1	3	1	1	1	1	2	5
31	2	2	0	1	0	1	0	1	1	1	1	1	2	1	3	2	1	1	1	1	2	0	0	2	1	3
AV	2	2	2	2	2	2	2	2	2	3	4	4	4	4	4	4	4	4	3	3	2	2	2	2	3	
PK	5	4	5	7	6	6	5	7	8	6	7	7	8	7	8	9	9	8	7	6	6	4	7	5		9

WIND SPEED @ 30M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	2	1	3	3	( )	5
2	4	2	3	4	2	2	3	2	1	2	2	0	2	4	3	5	1	0	1	3	3	4	3	3	2	5
3	4	6	3	4	4	3	2	4	6	7	7	9	9	8	9	8	7	10	9	6	2	4	5	5	6	10
4	4	4	3	2	2	1	2	1	5	4	5	5	6	5	8	4	5	5	2	3	1	2	4	4	4	8
5	2	3	3	3	4	3	3	4	5	7	8	6	5	5	6	8	6	5	6	3	1	1	0	1	4	8
6	2	1	0	0	1	0	0	1	2	3	2	5	4	6	5	4	5	6	5	2	3	5	2	1	3	6
7	0	1	1	2	1	2	1	0	0	2	4	5	5	5	8	6	3	7	2	3	3	2	4	5	3	8
8	2	3	5	6	8	4	3	4	5	8	8	9	9	9	11	12	12	10	8	8	6	6	9	5	7	12
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	9	8	2	4	5	6	( )	9
10	7	6	2	10	4	3	4	8	11	8	9	9	10	9	9	8	8	6	6	4	0	0	1	1	6	11
11	1	2	2	1	0	1	1	0	1	1	7	5	4	6	2	6	3	3	4	3	4	1	2	1	3	7
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	3	3	3	4	4	5	7	7	4	5	8	7	5	8
13	7	7	7	8	8	8	6	(PF)	(PF)	7	6	8	6	6	7	6	4	4	4	3	3	2	3	4	6	8
14	4	4	4	3	3	2	2	2	1	2	3	3	1	1	3	1	3	1	2	3	3	2	1	0	2	4
15	2	1	2	0	(CM)	(CM)	(CM)	0	1	1	2	4	2	5	3	3	2	2	2	1	1	0	1	1	2	5
16	1	0	0	1	0	0	0	1	1	3	4	4	4	4	8	5	3	5	2	1	(CM)	2	3	3	2	8
17	1	0	1	1	0	2	2	1	1	1	5	6	6	4	3	3	4	4	2	3	5	0	0	2	3	6
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	3	1	1	3	0	( )	3
19	1	2	0	1	0	4	1	5	8	6	9	5	7	5	4	4	4	5	5	4	4	3	3	4	4	9
20	2	1	1	2	0	1	1	2	3	3	3	2	2	3	3	3	2	2	3	2	1	3	2	0	2	3
21	0	0	0	(CM)	2	2	0	1	1	1	2	2	3	2	3	3	3	4	4	1	1	1	0	0	2	4
22	(CM)	0	0	0	0	0	0	0	1	2	2	1	3	3	3	4	7	2	0	2	2	4	3	0	2	7
23	2	0	1	0	1	2	1	1	3	4	4	4	3	4	4	4	5	5	3	1	1	1	1	2	2	5
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	2	4	4	2	4	2	1	0	( )	7
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	5	6	7	8	8	8	8	7	6	4	3	4	4	6	5	8
26	2	3	1	0	4	2	1	1	1	2	4	3	3	5	3	4	5	6	7	6	8	7	6	5	4	8
27	1	5	9	8	4	1	7	7	7	6	6	7	8	7	10	8	7	8	8	7	8	7	8	5	7	10
28	2	2	4	6	5	5	5	5	4	3	3	3	5	5	7	6	6	5	4	4	4	2	1	0	4	7
29	0	2	3	2	1	0	0	1	1	2	6	7	8	8	7	8	8	6	6	5	3	2	2	1	4	8
30	1	3	4	4	3	4	3	1	1	2	2	6	7	6	5	4	4	3	2	4	2	1	1	0	3	7
31	3	4	1	1	0	2	0	1	2	1	1	1	3	2	3	3	1	1	2	1	2	0	0	3	2	4
AV	2	3	2	3	2	2	2	2	3	4	5	5	5	5	5	5	5	5	4	4	3	3	3	3	4	
PK	7	7	9	10	8	8	7	8	11	8	9	9	10	9	11	12	12	10	9	8	8	7	9	7		12

WIND SPEED @ 60M
METERS/SEC

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	6	3	1	2	2	( )	6
2	4	4	4	4	2	2	2	2	1	2	2	0	2	4	4	6	2	0	1	3	4	5	4	5	3	6
3	5	7	4	4	5	4	3	4	7	8	8	10	11	9	10	9	8	11	10	7	3	6	7	7	7	11
4	6	6	4	3	2	2	1	2	6	4	6	7	8	7	9	5	6	7	3	4	0	2	4	4	4	9
5	3	4	4	4	5	4	4	4	5	8	8	7	6	6	7	8	7	6	7	4	2	2	2	2	5	8
6	2	1	1	1	1	0	1	1	2	4	3	6	5	6	5	5	6	6	5	3	4	7	2	1	3	7
7	0	2	1	2	2	4	3	1	0	3	4	5	5	5	9	7	4	8	3	4	0	2	5	5	4	9
8	4	4	6	7	9	5	4	4	6	9	9	11	11	10	12	13	13	12	10	10	8	7	11	6	8	13
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	9	10	9	3	5	7	8	( )	10
10	8	8	4	12	5	4	5	9	13	9	10	11	12	10	10	8	8	7	7	5	0	1	1	2	7	13
11	2	3	3	1	1	1	1	0	1	2	7	6	4	7	2	7	4	3	4	3	4	2	2	2	3	7
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	4	4	3	4	5	5	6	8	8	4	6	9	8	6	9
13	8	8	8	8	10	10	7	(PF)	(PF)	8	7	8	7	7	8	7	5	5	4	4	3	3	4	5	7	10
14	6	4	5	4	4	3	2	2	1	2	4	3	2	2	3	1	3	2	2	3	3	2	2	1	3	6
15	1	2	2	1	1	1	1	1	1	2	3	4	3	6	3	4	3	3	3	1	1	1	1	1	2	6
16	1	0	0	1	2	0	1	1	1	4	4	4	5	5	9	5	3	5	3	2	1	2	4	3	3	9
17	1	0	1	2	1	2	2	2	1	2	5	7	7	4	4	4	4	4	3	4	6	2	2	5	3	7
18	(PF)	(PF)	(PF)	(P)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	1	1	4	2	( )	4
19	0	2	(CM)		1	4	0	5	9	7	10	6	8	6	4	5	4	5	6	4	4	3	4	4	5	10
20	2	2	1	2	0	1	1	3	4	3	3	3	3	4	4	3	3	3	4	3	2	3	3	2	2	4
21	0	1	1	1	1	2	1	1	1	1	3	3	3	2	4	4	4	4	4	2	2	2	1	1	2	4
22	1	1	(CM)	1	1	0	2	1	1	2	2	1	4	3	4	4	7	2	1	3	3	4	3	1	2	7
23	2	1	1	1	1	2	1	1	4	5	5	4	4	4	4	4	5	5	3	2	2	1	2	3	3	5
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	2	5	4	3	6	4	2	0	( )	8
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	3	5	7	8	8	8	9	8	8	7	5	4	5	4	7	6	9
26	2	3	1	1	3	2	1	1	1	3	4	3	3	6	3	4	5	7	8	8	10	9	8	8	4	10
27	3	8	11	10	6	3	8	8	8	7	7	8	8	8	11	8	8	8	9	9	10	8	9	7	8	11
28	3	3	4	7	7	7	6	6	4	3	4	4	5	6	7	7	6	6	5	5	6	3	1	1	5	7
29	1	3	4	3	1	1	1	1	1	2	7	8	8	9	8	8	8	6	7	7	4	3	3	2	4	9
30	2	4	5	5	4	4	3	2	1	2	3	7	8	7	6	5	4	3	2	5	2	2	1	0	4	8
31	3	4	2	1	1	2	0	1	2	1	1	1	3	2	4	4	2	2	2	2	2	0	1	4	2	4
AV	3	3	3	4	3	3	3	3	3	4	5	5	6	6	6	6	5	6	5	5	4	3	4	4	4	
PK	8	8	11	12	10	10	8	9	13	9	10	11	12	10	12	13	13	12	10	10	10	9	11	8		13

WIND SPEED @10M
METERS/SEC

CB TRACT
MRI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	3	3	3	3	3	2	1	2	3	3	2	1	2	3	3	3	3	2	2	2	1	1	2	3
5	2	1	0	0	0	1	0	2	4	5	5	5	4	4	5	5	4	3	3	2	1	1	1	1	3	5
6	1	2	2	3	2	2	3	2	1	2	3	4	5	5	5	4	4	5	2	2	2	2	2	3	3	5
7	3	4	2	2	3	4	4	3	1	2	3	4	4	3	7	3	3	4	2	2	3	2	3	2	3	7
8	3	2	3	3	2	3	3	4	4	4	5	5	5	5	6	8	7	7	5	4	3	2	4	3	4	8
9	3	3	2	2	3	3	5	6	6	6	6	6	7	7	7	5	4	4	5	4	2	4	3	2	4	7
10	3	2	1	3	2	2	2	4	8	5	5	6	6	5	5	6	4	3	4	3	2	1	1	1	4	8
11	0	1	1	1	0	0	1	1	1	2	5	5	3	4	3	4	3	3	2	1	2	1	0	1	2	5
12	1	1	1	1	2	2	1	1	3	4	2	2	2	1	1	2	(IM)	(IM)	4	4	3	2	3	3	2	4
13	3	2	3	4	5	3	2	(IM)	(IM)	3	3	3	2	3	3	3	3	2	2	1	1	1	1	0	3	5
14	0	0	1	1	0	1	1	0	1	(IM)	2	2	2	2	3	1	2	2	1	1	2	2	2	1	1	3
15	2	1	1	2	1	2	2	1	1	1	2	3	4	4	5	3	3	2	2	2	1	2	2	2	2	5
16	2	2	3	3	2	1	2	2	1	3	3	4	3	5	5	3	2	4	1	2	1	1	1	2	2	5
17	2	2	3	2	2	3	2	3	1	1	3	4	4	2	2	4	5	4	2	1	3	3	3	4	3	5
18	4	4	4	4	5	5	3	2	3	5	5	5	5	4	5	4	4	3	4	1	2	1	1	2	4	5
19	1	2	3	3	2	2	1	5	6	3	5	4	5	6	3	2	4	3	3	2	2	1	2	3	3	6
20	1	1	1	1	2	1	1	1	3	2	3	3	3	4	3	3	3	2	2	2	2	2	2	(IM)	2	4
21	2	2	2	2	1	2	1	2	1	1	2	2	2	2	3	3	2	3	2	1	1	1	2	2	2	3
22	2	2	2	2	2	2	3	1	2	3	2	2	3	4	3	4	4	1	2	1	2	1	2	2	2	4
23	2	2	2	2	2	3	1	2	3	3	4	4	3	4	3	3	3	2	1	2	1	1	1	1	2	4
24	2	2	2	3	3	1	1	2	5	3	3	3	4	3	4	6	2	3	1	2	2	1	1	1	3	6
25	2	2	3	3	3	3	2	2	1	3	4	5	6	7	7	7	5	5	3	2	1	1	1	1	3	7
26	1	2	2	2	3	3	3	3	1	2	3	3	3	3	3	2	3	4	2	2	2	2	2	2	2	4
27	2	3	2	3	2	2	3	6	5	4	4	5	4	4	6	4	4	5	4	3	3	3	3	3	4	6
28	3	2	4	4	2	3	6	4	4	2	3	4	5	3	5	5	5	4	3	2	2	2	2	2	3	6
29	1	1	1	2	2	3	3	2	1	2	3	4	5	4	5	5	5	4	3	2	2	2	2	2	3	5
30	2	2	3	2	1	1	1	1	2	4	4	5	6	5	4	3	2	2	2	2	2	1	1	1	2	6
31	2	1	1	0	0	1	1	2	2	2	1	2	2	3	3	3	1	1	2	2	2	2	3	3	2	3
AV	2	2	2	2	2	2	2	2	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2	2	3	
PK	4	4	4	4	5	5	6	6	8	6	6	6	7	7	7	8	7	7	5	4	3	4	4	4		8

WIND DIRECTION @ 10M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	191	208	126	122	144	( )
2	170	204	166	157	153	111	99	79	63	50	37	349	249	305	316	308	313	207	176	200	149	140	136	182	154
3	180	184	156	154	155	134	144	194	210	211	212	216	211	218	210	236	221	217	214	247	328	189	186	205	199
4	196	195	151	114	103	122	88	190	225	234	223	263	255	259	227	195	174	188	150	163	137	187	268	315	192
5	322	278	252	255	265	265	279	310	329	337	335	345	338	353	331	320	332	339	335	352	241	236	(CM)	259	306
6	217	211	171	243	165	74	(CM)	48	320	336	318	322	307	297	287	307	297	295	304	242	221	202	72	207	274
7	195	119	205	209	71	185	84	(CM)	304	273	281	281	250	270	252	217	253	264	91	114	123	71	144	163	204
8	122	301	271	189	227	270	124	118	167	212	214	208	213	193	179	172	175	169	177	178	182	180	186	216	191
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	211	223	239	176	162	164	158	( )
10	153	173	140	177	178	113	162	172	186	191	188	208	207	209	210	238	249	233	229	261	0	149	165	60	188
11	291	237	270	256	309	336	14	343	75	157	235	230	207	237	188	247	192	335	312	314	286	(CM)	246	232	265
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	285	304	258	251	269	278	273	317	303	309	299	289	331	339	293
13	321	316	318	323	323	327	343	(PF)	(PF)	331	343	41	39	44	38	35	29	10	8	344	313	244	275	282	343
14	303	302	299	297	288	270	268	300	315	347	15	14	30	79	73	17	259	76	70	135	172	131	204	229	325
15	112	219	239	95	232	225	(CM)	(CM)	352	2	312	39	142	209	332	357	356	11	336	264	216	201	216	192	268
16	169	246	158	164	246	214	(CM)	341	349	328	317	334	314	326	349	15	12	350	32	43	230	237	235	227	303
17	188	(CM)	188	225	83	121	115	56	10	20	209	205	238	268	205	245	129	120	124	149	173	355	71	205	162
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	59	203	27	289	180	( )
19	214	228	240	220	121	132	330	299	272	230	201	196	195	284	291	231	248	290	300	310	321	341	358	356	264
20	7	319	221	251	139	241	262	321	340	355	299	338	320	328	314	313	306	348	339	2	159	181	186	221	302
21	216	233	(CM)	233	262	236	(CM)	4	357	321	350	357	339	312	345	351	335	352	2	15	161	184	(CM)	201	314
22	207	143	230	233	27	113	156	9	341	348	359	259	325	320	72	352	333	0	22	267	229	210	214	171	303
23	217	(CM)	223	184	225	147	297	319	359	5	334	341	337	321	330	314	338	16	27	331	292	323	233	235	310
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	293	289	350	34	10	44	59	188	214	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	53	309	307	286	300	290	302	323	312	297	305	295	222	250	274	305	297
26	274	214	176	209	129	152	53	45	339	314	287	308	315	305	323	209	217	225	211	192	197	193	193	191	230
27	68	183	202	198	200	143	196	190	192	197	203	204	210	200	176	177	180	182	177	176	180	177	174	172	184
28	114	95	145	162	191	329	320	315	326	341	342	332	274	236	226	228	282	319	313	330	316	235	234	235	283
29	250	237	226	227	126	220	66	75	17	356	213	208	219	219	218	236	204	180	175	198	281	323	44	130	213
30	307	327	291	265	271	256	285	298	354	328	333	328	272	305	328	8	27	33	344	304	270	229	209	183	304
31	166	156	207	126	231	92	243	47	343	351	3	297	11	284	329	324	13	22	265	326	189	67	171	162	325
PV	206	223	212	207	194	177	72	357	339	322	295	295	274	277	285	286	285	314	317	278	221	197	201	206	264

WIND DIRECTION @ 30M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	188	221	155	115	138	( )
2	165	184	187	159	146	115	102	82	66	50	40	339	251	303	313	310	315	220	165	193	147	145	152	189	158
3	187	187	166	162	164	148	154	197	212	214	214	217	213	220	212	238	221	220	215	249	324	193	190	211	203
4	201	200	168	141	117	136	94	199	227	235	225	267	261	263	230	197	175	188	163	169	135	205	279	327	198
5	330	293	270	273	275	280	284	309	327	337	333	343	336	351	329	319	331	338	333	353	351	275	8	319	320
6	243	225	207	308	227	81	149	49	316	333	317	321	305	297	285	305	293	294	302	259	232	202	51	203	280
7	171	88	169	217	177	202	192	229	270	273	285	281	247	267	251	221	256	267	94	114	121	71	129	158	207
8	169	289	270	195	231	270	121	120	169	214	216	210	215	195	181	173	176	170	179	180	185	183	188	218	195
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	215	225	242	189	168	166	155	( )
10	150	168	162	176	178	114	158	172	188	192	189	209	209	210	211	240	252	234	231	261	307	34	180	64	194
11	327	267	307	303	351	338	6	349	79	163	238	232	208	239	190	249	194	337	312	321	294	47	285	268	290
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	287	307	263	255	272	280	277	317	304	311	307	295	333	341	296
13	322	318	319	324	323	327	343	(PF)	(PF)	331	342	40	41	45	39	34	30	9	7	346	320	273	286	286	344
14	304	306	305	303	291	286	279	298	321	344	17	15	35	81	70	9	259	69	68	120	145	138	165	302	343
15	103	132	267	101	(CM)	(CM)	(CM)	270	350	0	311	41	142	209	333	355	358	11	336	297	248	265	215	197	312
16	197	328	115	148	121	245	261	338	346	327	318	332	313	325	348	13	14	351	33	44	(CM)	278	255	241	326
17	211	63	161	246	42	111	120	60	9	21	211	206	243	270	210	243	129	119	126	140	167	211	153	185	164
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	71	200	34	307	102	( )
19	205	226	261	295	76	118	325	297	269	231	202	197	198	289	286	227	247	287	299	309	319	343	356	356	274
20	5	324	243	293	121	291	272	320	338	355	298	335	319	326	313	311	306	346	336	4	115	151	155	194	317
21	270	287	11	(CM)	284	251	289	0	349	321	344	355	337	311	343	349	332	352	1	9	104	134	106	337	337
22	(CM)	201	240	251	355	48	98	9	342	347	355	257	325	312	73	351	332	359	25	294	256	217	222	168	320
23	223	0	256	185	260	142	325	315	1	4	332	340	333	322	328	315	336	15	24	348	338	6	270	261	325
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	292	286	349	33	13	43	58	143	238	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	51	306	305	284	298	287	301	321	309	294	303	296	237	264	286	307	297
26	287	225	199	311	118	127	83	56	338	310	286	305	312	302	319	211	220	226	213	196	198	194	197	191	240
27	196	193	206	201	203	178	196	190	193	198	205	207	212	200	176	177	181	182	178	175	180	180	176	174	190
28	130	101	141	162	187	330	317	312	325	336	338	329	270	237	228	229	284	317	312	329	323	270	276	307	292
29	289	250	246	253	198	270	74	81	31	1	215	211	220	220	220	237	206	180	174	191	286	322	43	92	229
30	329	335	296	270	278	266	284	298	358	328	333	328	274	302	326	8	28	33	339	305	279	236	219	161	308
31	157	148	176	87	22	101	204	55	346	352	358	281	8	288	330	324	16	22	265	330	156	48	159	155	19
PV	222	241	224	230	200	189	209	338	337	320	294	293	274	277	284	286	285	313	313	292	233	210	201	216	279

WIND DIRECTION @ 60M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	187	229	210	122	144	( )
2	166	180	197	169	167	130	104	84	73	60	45	0	253	308	319	319	324	256	156	181	148	151	164	197	159
3	194	191	173	170	173	165	166	199	212	215	215	217	213	221	214	238	222	222	216	249	313	198	195	214	207
4	208	207	181	172	153	166	111	205	227	238	227	268	263	264	230	202	178	188	176	179	189	233	286	339	209
5	346	317	294	294	294	305	299	318	334	342	340	348	342	356	334	325	338	342	338	355	9	314	15	338	332
6	282	270	262	315	278	230	199	65	323	338	323	327	311	304	290	311	298	299	308	279	255	218	43	281	294
7	0	55	152	227	209	214	207	224	249	281	287	285	252	273	257	224	256	263	110	120	0	71	121	163	232
8	190	290	274	204	233	267	121	124	173	215	216	211	215	197	183	175	177	173	181	183	187	187	191	217	198
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	213	223	242	200	170	169	156	( )
10	153	166	170	176	180	125	163	174	189	194	191	209	209	209	211	239	250	233	231	254	231	14	197	73	196
11	333	297	329	333	354	351	4	4	84	172	236	230	208	238	196	247	198	343	320	333	309	59	305	285	304
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	298	315	283	274	289	295	289	323	313	318	313	311	341	347	308
13	330	328	328	331	330	333	349	(PF)	(PF)	337	348	44	47	51	46	40	35	16	13	351	332	299	300	302	352
14	316	318	320	315	305	309	295	302	338	349	22	20	44	89	76	11	257	78	73	112	134	126	137	280	0
15	110	111	251	317	272	349	292	253	356	7	319	43	148	209	336	0	4	16	341	321	309	306	140	235	326
16	221	279	59	145	112	250	263	335	354	334	324	338	321	331	352	19	18	355	39	57	73	315	277	268	339
17	255	55	160	221	216	106	123	79	12	18	212	207	243	268	217	244	134	124	131	139	161	186	191	186	176
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	89	201	40	329	58	( )
19	233	247	(CM)	308	84	111	341	304	274	233	204	198	199	287	291	234	254	292	304	314	325	350	2	360	283
20	10	338	279	312	63	331	299	331	344	357	307	337	327	333	319	315	307	350	340	5	100	140	150	171	336
21	315	7	40	103	270	268	266	12	356	328	346	353	341	319	349	351	339	357	8	17	83	122	114	55	358
22	19	172	(CM)	266	289	304	59	52	358	355	4	259	330	316	79	356	337	4	24	306	289	232	236	217	328
23	214	3	315	279	274	141	312	329	7	8	337	344	337	327	333	322	343	19	27	357	354	12	318	288	335
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	298	289	355	36	17	45	56	125	348	( )
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	50	311	310	291	302	293	307	326	314	300	310	304	270	282	303	317	307
26	302	243	240	323	111	132	185	74	346	315	292	311	314	307	322	211	222	226	213	202	204	201	205	195	246
27	198	199	211	205	207	188	197	191	196	199	207	209	213	201	177	178	184	183	178	176	181	184	178	178	192
28	155	115	148	169	191	336	321	317	331	339	341	332	278	242	229	230	285	323	318	332	331	300	313	344	301
29	353	269	269	281	232	290	66	100	48	13	217	212	220	221	221	235	208	183	176	187	296	328	43	67	243
30	356	347	308	281	294	284	292	309	2	331	339	334	281	306	330	13	33	37	338	313	282	242	235	35	322
31	158	143	152	82	100	104	169	74	347	352	354	287	11	298	332	330	22	27	263	342	145	304	159	149	37
PV	265	271	243	256	229	251	252	360	346	325	300	298	279	281	289	291	289	319	319	305	265	252	199	260	291

WIND DIRECTION @10M
DEGREES

CB TRACT
MRI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PREV
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
4	(IM)	(IM)	116	121	118	125	122	90	334	260	283	78	22	199	234	113	75	63	74	80	98	91	272	239	146
5	286	284	151	183	125	98	66	298	294	296	310	319	311	309	289	287	303	316	307	16	132	100	146	151	224
6	87	92	107	120	115	106	120	111	237	252	261	266	285	279	281	267	274	270	282	57	84	95	105	111	178
7	122	123	120	108	103	126	123	120	44	280	269	256	215	268	241	204	257	178	96	114	118	111	115	107	159
8	114	101	226	109	202	305	126	91	107	176	171	202	193	170	139	130	133	124	118	113	105	102	133	215	150
9	114	117	111	100	101	118	139	158	160	161	178	164	158	171	157	195	246	196	227	233	80	122	97	86	149
10	105	349	76	106	101	102	92	115	141	156	172	188	173	197	197	234	259	256	232	270	288	332	101	92	181
11	186	143	102	102	93	273	283	279	103	96	241	217	131	193	121	238	296	346	334	320	316	109	250	134	204
12	94	80	107	316	296	293	251	275	270	244	281	286	235	340	285	292	(IM)	(IM)	278	272	282	296	299	300	258
13	289	288	294	295	292	297	304	(IM)	(IM)	291	323	62	34	47	20	7	327	336	320	331	72	113	93	243	213
14	93	190	276	34	357	71	109	140	226	(IM)	19	2	136	119	70	195	231	76	101	108	96	93	103	96	128
15	105	92	92	96	95	92	113	101	273	264	253	9	348	243	313	0	350	347	337	34	82	100	114	114	165
16	115	97	120	120	102	88	102	119	69	259	290	280	313	283	331	3	161	346	3	21	90	167	99	98	153
17	104	116	126	91	100	115	122	125	111	240	222	189	233	279	206	241	111	86	98	85	113	114	119	121	144
18	119	115	117	114	122	119	117	120	96	95	133	160	172	166	157	175	172	194	287	82	2	150	106	107	133
19	110	104	122	110	114	121	103	260	283	236	150	157	195	268	274	244	252	262	293	283	313	298	304	315	215
20	270	308	86	86	115	95	116	236	299	277	270	277	263	263	258	270	270	290	311	39	102	117	112	(IM)	206
21	83	101	106	87	119	90	87	79	287	281	268	273	282	269	269	296	311	326	342	54	116	64	96	96	183
22	94	95	93	93	92	96	117	100	284	277	280	262	321	106	97	309	313	299	54	66	95	80	93	95	159
23	88	87	96	102	108	118	86	42	335	335	317	301	288	291	296	304	311	357	357	42	122	121	120	107	197
24	97	96	102	122	122	94	82	245	264	264	307	280	318	355	322	274	270	323	9	9	3	59	83	95	175
25	101	111	118	116	123	121	110	120	143	273	289	278	276	282	275	292	274	284	281	305	96	93	148	94	192
26	97	89	90	93	102	121	120	121	304	301	269	279	269	279	241	220	169	222	202	101	87	85	83	79	168
27	98	94	94	100	80	113	108	134	159	157	181	167	196	202	146	159	177	140	131	109	93	98	87	100	130
28	104	87	115	114	93	302	299	280	300	268	274	285	277	269	230	253	289	299	298	341	95	101	113	120	217
29	101	71	91	99	122	118	122	124	103	264	283	194	216	188	212	230	201	137	124	75	302	94	98	105	153
30	142	271	264	277	311	91	33	166	205	266	274	290	275	289	312	358	23	354	300	254	240	280	100	110	228
31	104	101	173	0	0	91	137	225	272	279	262	283	263	309	282	272	263	235	329	19	102	102	116	114	181
PV	127	141	132	122	137	139	133	158	211	243	244	214	228	237	223	216	234	247	219	137	133	132	132	135	178

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
10 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

DAY	HOUR (LOCAL STANDARD TIME) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	VECTOR DIR	VECTOR VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	191	208	126	122	144	****	****
2	170	204	166	157	153	111	99	79	63	50	37	349	249	305	316	308	313	207	176	200	149	140	136	182	163	0.4
3	180	184	156	154	155	134	144	194	210	211	212	216	211	218	210	236	221	217	214	247	328	189	186	205	208	3.8
4	196	195	151	114	103	122	88	190	225	234	223	263	255	259	227	195	174	188	150	163	137	187	268	315	212	1.7
5	322	278	252	255	265	265	279	310	329	337	335	345	338	353	331	320	332	339	335	352	241	236	***	259	322	2.8
6	217	211	171	243	165	74	***	48	320	336	318	322	307	297	287	307	297	295	304	242	221	202	72	207	291	1.5
7	195	119	205	209	71	185	84	***	304	273	281	281	250	270	252	217	253	264	91	114	123	71	144	163	234	1.3
8	122	301	271	189	227	270	124	118	167	212	214	208	213	193	179	172	175	169	177	178	182	180	186	216	191	4.5
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	211	223	239	176	162	164	158	****	****
10	153	173	140	177	178	113	162	172	186	191	188	208	207	209	210	238	249	233	229	261	0	149	165	60	199	3.8
11	291	237	270	256	309	336	14	343	75	157	235	230	207	237	188	247	192	335	312	314	286	***	246	232	250	1.3
12	***	***	***	***	***	***	***	***	***	***	285	304	258	251	269	278	273	317	303	309	299	289	331	339	301	3.1
13	321	316	318	323	323	327	343	***	***	331	343	41	39	44	38	35	29	10	8	344	313	244	275	282	349	3.2
14	303	302	299	297	288	270	268	300	315	347	15	14	30	79	73	17	259	76	70	135	172	131	204	229	323	0.6
15	112	219	239	95	232	225	***	***	352	2	312	39	142	209	332	357	356	11	336	264	216	201	216	192	314	0.3
16	169	246	158	164	246	214	***	341	349	328	317	334	314	326	349	15	12	350	32	43	230	237	235	227	330	1.2
17	188	***	188	225	83	121	115	56	10	20	209	205	238	268	205	245	129	120	124	149	173	355	71	205	187	1.0
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	59	203	27	289	180	****	****
19	214	228	240	220	121	132	330	299	272	230	201	196	195	284	291	231	248	290	300	310	321	341	358	356	261	1.8
20	7	319	221	251	139	241	262	321	340	355	299	338	320	328	314	313	306	348	339	2	159	181	186	221	314	1.0
21	216	233	***	233	262	236	***	4	357	321	350	357	339	312	345	351	335	352	2	15	161	184	***	201	332	1.0
22	207	143	230	233	27	113	156	9	341	348	359	259	325	320	72	352	333	0	22	267	229	210	214	171	313	0.6
23	217	***	223	184	225	147	297	319	359	5	334	341	337	321	330	314	338	16	27	331	292	323	233	235	328	1.3
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	293	289	350	34	10	44	59	188	214	****	****
25	***	***	***	***	***	***	***	***	53	309	307	286	300	290	302	323	312	297	305	295	222	250	274	305	299	3.7
26	274	214	176	209	129	152	53	45	339	314	287	308	315	305	323	209	217	225	211	192	197	193	193	191	227	1.4
27	68	183	202	198	200	143	196	190	192	197	203	204	210	200	176	177	180	182	177	176	180	177	174	172	188	4.6
28	114	95	145	162	191	329	320	315	326	341	342	332	274	236	226	228	282	319	313	330	316	235	234	235	284	1.6
29	250	237	226	227	126	220	66	75	17	356	213	208	219	219	218	236	204	180	175	198	281	323	44	130	214	2.2
30	307	327	291	265	271	256	285	298	354	328	333	328	272	305	328	8	27	33	344	304	270	229	209	183	309	1.7
31	166	156	207	126	231	92	243	47	343	351	3	297	11	284	329	324	13	22	265	326	189	67	171	162	334	0.2
VD	211	223	228	202	222	230	266	249	260	291	265	268	254	264	265	269	263	276	268	249	215	198	203	215	249	
VV	0.7	0.9	1.1	1.3	0.8	0.2	0.2	0.3	0.7	1.1	1.7	1.7	2.2	2.4	1.7	1.9	1.4	1.1	1.0	0.9	1.0	1.0	1.0	0.9		1.0

TOTAL NUMBER OF OBSERVATIONS = 642

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
30 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	188	221	155	115	138	****	****
2	165	184	187	159	146	115	102	82	66	50	40	339	251	303	313	310	315	220	165	193	147	145	152	189	166	0.8
3	187	187	166	162	164	148	154	197	212	214	214	217	213	220	212	238	221	220	215	249	324	193	190	211	210	5.4
4	201	200	168	141	117	136	94	199	227	235	225	267	261	263	230	197	175	188	163	169	135	205	279	327	217	2.6
5	330	293	270	273	275	280	284	309	327	337	333	343	336	351	329	319	331	338	333	353	351	275	8	319	324	3.8
6	243	225	207	308	227	81	149	49	316	333	317	321	305	297	285	305	293	294	302	259	232	202	51	203	290	2.1
7	171	88	169	217	177	202	192	229	270	273	285	281	247	267	251	221	256	267	94	114	121	71	129	158	230	1.6
8	169	289	270	195	231	270	121	120	169	214	216	210	215	195	181	173	176	170	179	180	185	183	188	218	194	6.2
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	215	225	242	189	168	166	155	****	****
10	150	168	162	176	178	114	158	172	188	192	189	209	209	210	211	240	252	234	231	261	307	34	180	64	199	5.1
11	327	267	307	303	351	338	6	349	79	163	238	232	208	239	190	249	194	337	312	321	294	47	285	268	261	1.6
12	***	***	***	***	***	***	***	***	***	***	287	307	263	255	272	280	277	317	304	311	307	295	333	341	304	4.4
13	322	318	319	324	323	327	343	***	***	331	342	40	41	45	39	34	30	9	7	346	320	273	286	286	348	4.5
14	304	306	305	303	291	286	279	298	321	344	17	15	35	81	70	9	259	69	68	120	145	138	165	302	332	0.8
15	103	132	267	101	***	***	***	270	350	0	311	41	142	209	333	355	358	11	336	297	248	265	215	197	334	0.5
16	197	328	115	148	121	245	261	338	346	327	318	332	313	325	348	13	14	351	33	44	***	278	255	241	334	1.7
17	211	63	161	246	42	111	120	60	9	21	211	206	243	270	210	243	129	119	126	140	167	211	153	185	185	1.4
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	71	200	34	307	102	****	****
19	205	226	261	295	76	118	325	297	269	231	202	197	198	289	286	227	247	287	299	309	319	343	356	356	263	2.4
20	5	324	243	293	121	291	272	320	338	355	298	335	319	326	313	311	306	346	336	4	115	151	155	194	323	1.3
21	270	287	11	***	284	251	289	0	349	321	344	355	337	311	343	349	332	352	1	9	104	134	106	337	340	1.3
22	***	201	240	251	355	48	98	9	342	347	355	257	325	312	73	351	332	359	25	294	256	217	222	168	321	1.0
23	223	0	256	185	260	142	325	315	1	4	332	340	333	322	328	315	336	15	24	348	338	6	270	261	335	1.9
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	292	286	349	33	13	43	58	143	238	****	****
25	***	***	***	***	***	***	***	***	51	306	305	284	298	287	301	321	309	294	303	296	237	264	286	307	298	5.1
26	287	225	199	311	118	127	83	56	338	310	286	305	312	302	319	211	220	226	213	196	198	194	197	191	224	2.2
27	196	193	206	201	203	178	196	190	193	198	205	207	212	200	176	177	181	182	178	175	180	180	176	174	190	6.4
28	130	101	141	162	187	330	317	312	325	336	338	329	270	237	228	229	284	317	312	329	323	270	276	307	284	2.1
29	289	250	246	253	198	270	74	81	31	1	215	211	220	220	220	237	206	180	174	191	286	322	43	92	217	2.7
30	329	335	296	270	278	266	284	298	358	328	333	328	274	302	326	8	28	33	339	305	279	236	219	161	311	2.5
31	157	148	176	87	22	101	204	55	346	352	358	281	8	288	330	324	16	22	265	330	156	48	159	155	16	0.2
VD	215	228	239	213	225	266	238	240	256	285	264	267	255	264	263	270	262	272	264	249	219	202	208	216	252	
VV	0.8	1.1	1.3	1.5	1.1	0.3	0.2	0.4	1.0	1.5	2.4	2.2	3.0	3.3	2.3	2.6	1.9	1.6	1.4	1.2	1.0	1.3	1.1	1.0		1.4

TOTAL NUMBER OF OBSERVATIONS = 648

NOTE: **** = MISSING DATA

WIND DIRECTION AND
VECTOR AVERAGE VELOCITY (DEG & MPS)
60 METER LEVEL

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

	HOUR (LOCAL STANDARD TIME)																							VECTOR	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DIR	VEL
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	187	229	210	122	144	****	****
2	166	180	197	169	167	130	104	84	73	60	45	0	253	308	319	319	324	256	156	181	148	151	164	197	175	1.1
3	194	191	173	170	173	165	166	199	212	215	215	217	213	221	214	238	222	222	216	249	313	198	195	214	212	6.4
4	208	207	181	172	153	166	111	205	227	238	227	268	263	264	230	202	178	188	176	179	189	233	286	339	221	3.4
5	346	317	294	294	294	305	299	318	334	342	340	348	342	356	334	325	338	342	338	355	9	314	15	338	333	4.6
6	282	270	262	315	278	230	199	65	323	338	323	327	311	304	290	311	298	299	308	279	255	218	43	281	297	2.6
7	0	55	152	227	209	214	207	224	249	281	287	285	252	273	257	224	256	263	110	120	0	71	121	163	236	2.0
8	190	290	274	204	233	267	121	124	173	215	216	211	215	197	183	175	177	173	181	183	187	187	191	217	197	7.2
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	213	223	242	200	170	169	156	****	****
10	153	166	170	176	180	125	163	174	189	194	191	209	209	209	211	239	250	233	231	254	231	14	197	73	198	6.0
11	333	297	329	333	354	351	4	4	84	172	236	230	208	238	196	247	198	343	320	333	309	59	305	285	271	1.7
12	***	***	***	***	***	***	***	***	***	***	298	315	283	274	289	295	289	323	313	318	313	311	341	347	314	5.3
13	330	328	328	331	330	333	349	***	***	337	348	44	47	51	46	40	35	16	13	351	332	299	300	302	354	5.4
14	316	318	320	315	305	309	295	302	338	349	22	20	44	89	76	11	257	78	73	112	134	126	137	280	349	1.2
15	110	111	251	317	272	349	292	253	356	7	319	43	148	209	336	0	4	16	341	321	309	306	140	235	339	0.7
16	221	279	59	145	112	250	263	335	354	334	324	338	321	331	352	19	18	355	39	57	73	315	277	268	342	1.9
17	255	55	160	221	216	106	123	79	12	18	212	207	243	268	217	244	134	124	131	139	161	186	191	186	188	1.9
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	89	201	40	329	58	****	****
19	233	247	***	308	84	111	341	304	274	233	204	198	199	287	291	234	254	292	304	314	325	350	2	360	269	2.7
20	10	338	279	312	63	331	299	331	344	357	307	337	327	333	319	315	307	350	340	5	100	140	150	171	335	1.6
21	315	7	40	103	270	268	266	12	356	328	346	353	341	319	349	351	339	357	8	17	83	122	114	55	355	1.5
22	19	172	***	266	289	304	59	52	358	355	4	259	330	316	79	356	337	4	24	306	289	232	236	217	332	1.2
23	214	3	315	279	274	141	312	329	7	8	337	344	337	327	333	322	343	19	27	357	354	12	318	288	342	2.3
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	298	289	355	36	17	45	56	125	348	****	****
25	***	***	***	***	***	***	***	***	50	311	310	291	302	293	307	326	314	300	310	304	270	282	303	317	305	5.9
26	302	243	240	323	111	132	185	74	346	315	292	311	314	307	322	211	222	226	213	202	204	201	205	195	227	2.8
27	198	199	211	205	207	188	197	191	196	199	207	209	213	201	177	178	184	183	178	176	181	184	178	178	192	7.7
28	155	115	148	169	191	336	321	317	331	339	341	332	278	242	229	230	285	323	318	332	331	300	313	344	291	2.4
29	353	269	269	281	232	290	66	100	48	13	217	212	220	221	221	235	208	183	176	187	296	328	43	67	221	2.9
30	356	347	308	281	294	284	292	309	2	331	339	334	281	306	330	13	33	37	338	313	282	242	235	35	319	2.9
31	158	143	152	82	100	104	169	74	347	352	354	287	11	298	332	330	22	27	263	342	145	304	159	149	58	0.3
VD	228	236	248	225	235	285	244	232	262	290	267	270	258	267	266	273	266	273	264	250	239	215	209	221	257	
VV	0.7	1.1	1.5	1.6	1.4	0.5	0.4	0.5	1.0	1.6	2.5	2.3	3.2	3.5	2.5	2.8	2.0	1.7	1.4	1.2	1.0	1.3	1.1	1.0		1.5

TOTAL NUMBER OF OBSERVATIONS = 652

NOTE: **** = MISSING DATA

SIGMA HORIZ. WIND DIR. @ 10M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	16	15	5	4	( )	16
2	12	17	18	4	10	6	7	9	33	25	24	36	29	15	15	13	18	10	15	10	15	12	9	9	15	36
3	12	10	13	6	9	13	15	13	12	11	14	13	13	13	13	11	12	9	9	10	14	9	9	9	11	15
4	6	5	8	7	5	10	9	35	12	19	15	13	14	13	9	9	7	11	16	12	8	12	13	11	12	35
5	11	9	5	7	5	6	7	13	14	12	13	13	17	14	17	12	14	13	9	6	19	7	(CM)	25	12	25
6	6	6	20	24	10	11	(CM)	32	23	26	32	17	22	16	19	20	16	12	10	10	5	12	10	9	16	32
7	12	18	5	6	16	9	19	(CM)	36	30	19	15	15	16	15	12	15	12	9	5	6	17	7	5	14	36
8	17	16	11	9	10	16	13	11	15	12	13	12	14	13	11	9	10	10	9	8	8	6	9	10	11	17
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	10	10	14	9	5	( )	14
10	5	10	19	7	14	8	9	9	11	13	14	15	14	14	13	13	10	10	11	8	18	29	20	16	13	29
11	17	8	15	14	18	10	21	23	25	34	15	14	16	14	38	18	21	12	9	7	6	(CM)	6	5	16	38
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	8	7	5	6	7	8	8	7	6	6	6	8	8	7	8
13	7	6	7	7	8	8	9	(PF)	(PF)	9	10	9	11	11	12	11	10	10	8	6	6	10	8	5	9	12
14	5	7	6	5	4	7	7	10	27	21	18	17	35	34	21	25	21	13	7	5	6	14	12	14	14	35
15	6	17	6	11	13	24	(CM)	(CM)	29	29	40	18	16	12	20	17	20	15	8	5	4	9	9	14	16	40
16	8	20	13	11	14	13	(CM)	16	34	22	20	19	18	19	10	11	14	10	11	9	8	6	4	7	14	34
17	8	(CM)	6	13	12	7	11	13	24	25	23	12	12	17	21	30	11	8	10	5	4	40	30	33	16	40
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	9	25	13	26	( )	26
19	26	16	16	15	17	6	16	13	9	13	10	15	14	17	14	16	13	11	8	6	7	9	10	9	13	26
20	16	11	4	11	14	10	10	19	20	20	21	34	31	23	29	32	19	16	9	7	9	8	20	22	17	34
21	12	9	(CM)	13	8	4	(CM)	27	34	38	25	27	31	35	25	23	21	11	8	11	16	14	(CM)	18	20	38
22	17	30	10	19	17	12	10	14	25	26	24	45	17	16	11	19	11	11	9	10	9	5	9	19	16	45
23	8	(CM)	4	20	10	7	22	28	17	11	16	23	24	18	22	23	13	10	11	11	17	29	13	12	16	29
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	18	13	8	8	7	10	11	7	( )	18
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	35	23	17	16	15	13	13	12	11	12	8	7	5	8	8	8	13	35
26	8	5	12	13	6	13	12	18	34	23	20	32	39	17	30	16	18	11	9	5	6	6	6	11	15	39
27	41	15	6	7	18	19	8	8	12	13	16	15	15	15	9	13	13	10	8	6	7	6	8	18	13	41
28	26	17	9	4	10	11	9	12	17	23	19	26	19	18	17	14	14	11	10	6	7	8	6	29	14	29
29	15	6	3	5	18	13	14	34	33	22	18	15	15	13	13	15	11	10	6	5	15	23	17	14	15	34
30	12	10	8	9	7	7	9	23	29	27	30	11	11	12	10	9	11	13	13	10	8	11	5	8	13	30
31	4	5	12	9	15	8	12	21	20	31	35	33	27	45	23	23	30	20	20	21	8	21	27	8	20	45
AV	13	12	10	10	12	10	12	18	23	21	20	19	19	17	17	16	15	12	10	8	9	13	11	13	14	
PK	41	30	20	24	18	24	22	35	36	38	40	45	39	45	38	32	30	20	20	21	19	40	30	33		45

SIGMA HORIZ. WIND DIR. @ 30M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	5	13	14	5	4	( )	14
2	4	15	9	4	16	7	4	8	32	24	22	31	27	13	15	11	16	10	16	8	11	8	9	6	14	32
3	11	10	13	6	10	13	16	12	10	10	12	12	12	12	12	11	11	9	8	8	19	9	9	7	11	19
4	5	4	10	10	8	15	11	26	10	19	14	12	13	12	8	7	5	9	16	11	9	9	9	10	11	26
5	13	10	5	5	5	6	6	12	13	10	12	12	15	13	16	11	14	12	8	4	17	12	20	11	11	20
6	12	10	23	13	10	13	21	30	19	23	32	16	19	14	18	19	14	11	9	10	7	11	9	14	16	32
7	27	11	6	4	17	9	15	33	33	30	17	14	14	15	13	11	14	10	13	5	5	14	6	3	14	33
8	24	19	11	8	9	14	11	9	14	11	12	11	13	13	9	8	10	9	8	8	8	5	8	9	11	24
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	12	9	10	13	8	3	( )	13
10	3	10	18	6	15	7	7	9	9	12	13	14	13	14	13	12	8	10	11	8	20	28	18	20	12	28
11	12	9	14	17	19	11	21	24	30	32	13	13	14	14	36	18	20	13	9	7	5	11	7	6	16	36
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	7	7	5	5	6	7	8	6	3	1	5	7	7	6	8
13	6	6	6	7	7	7	8	(PF)	(PF)	8	9	9	11	10	11	10	9	9	7	6	7	8	8	4	8	11
14	4	6	6	5	4	6	6	9	22	20	15	16	28	32	15	26	17	12	6	3	4	13	18	19	13	32
15	6	24	7	15	(CM)	(CM)	(CM)	36	27	28	30	13	15	11	19	15	19	14	7	9	11	23	7	24	17	36
16	10	13	7	13	18	13	35	19	39	18	18	16	16	16	8	11	13	8	10	8	(CM)	12	5	6	14	39
17	10	17	6	9	13	4	7	12	24	23	27	11	12	15	17	26	10	7	9	4	2	37	39	15	15	39
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	8	16	11	17	( )	17
19	27	10	17	19	22	4	16	13	8	12	9	15	13	16	12	13	11	10	7	4	6	7	9	8	12	27
20	14	13	5	10	14	20	12	18	17	19	16	27	28	21	26	29	19	15	8	5	7	4	12	32	16	32
21	14	16	16	(CM)	6	3	28	30	33	31	22	25	29	35	24	22	18	11	7	13	13	7	15	20	19	35
22	(CM)	17	21	25	6	14	17	21	28	21	22	45	15	14	9	17	9	12	9	12	14	5	8	27	17	45
23	10	26	14	20	13	7	22	30	15	9	15	22	20	17	19	20	11	8	12	9	15	22	26	17	17	30
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	16	12	9	7	6	9	13	16	( )	16
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	27	22	16	14	12	11	12	10	10	11	7	7	7	7	7	6	12	27
26	11	4	9	18	4	7	23	23	34	19	18	27	34	18	25	17	16	9	8	5	4	3	5	12	15	34
27	37	19	4	6	21	21	8	8	11	13	15	14	15	15	9	13	12	9	7	5	6	6	7	15	12	37
28	25	17	8	4	9	10	8	10	16	21	16	24	17	16	16	13	14	9	8	5	5	10	8	24	13	25
29	13	6	5	7	15	40	20	31	31	25	17	14	15	13	12	13	11	9	5	4	16	16	9	12	15	40
30	10	10	8	8	7	6	7	23	29	25	23	9	10	11	9	7	9	12	14	13	8	9	4	7	12	29
31	3	5	10	9	26	5	12	20	18	34	32	28	27	38	21	22	22	19	18	22	9	19	34	6	19	38
AV	13	12	10	10	12	11	14	19	22	20	18	17	17	16	15	15	13	11	9	8	9	12	12	12	14	
PK	37	26	23	25	26	40	35	36	39	34	32	45	34	38	36	29	22	19	18	22	20	37	39	32		45

SIGMA HORIZ. WIND DIR. @ 60M
DEGREES

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	4	9	21	6	5	( )	21
2	3	5	4	6	22	12	5	7	32	21	23	30	25	13	15	9	10	9	15	5	8	6	7	5	12	32
3	10	10	11	6	11	12	16	12	9	9	11	10	10	11	11	10	10	7	7	8	12	8	8	6	10	16
4	4	3	8	11	15	22	20	25	8	16	12	12	11	10	7	6	3	5	15	10	13	13	7	11	11	25
5	13	12	7	4	4	6	4	12	12	10	11	12	14	14	13	10	13	11	7	4	7	8	14	8	10	14
6	18	13	17	15	8	13	13	38	18	19	33	15	18	12	17	17	13	10	8	9	6	7	24	20	16	38
7	22	12	18	4	9	4	5	33	45	28	14	13	13	13	12	10	13	8	12	3	0	15	3	3	13	45
8	16	20	10	8	7	12	10	8	12	10	10	9	11	12	8	7	9	9	8	7	7	5	7	9	10	20
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	9	8	10	11	7	2	( )	11
10	2	10	13	4	14	10	6	9	9	10	12	14	11	12	12	11	8	7	10	7	25	25	15	12	11	25
11	8	6	8	11	7	10	24	26	31	28	11	12	12	12	34	14	20	13	9	7	5	10	6	3	14	34
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	6	6	5	4	5	7	7	6	4	5	5	6	6	6	7
13	6	5	6	6	6	6	8	(PF)	(PF)	7	8	9	11	8	10	9	9	9	8	6	6	8	5	5	7	11
14	3	5	5	5	4	5	5	7	21	17	13	15	21	27	15	24	17	11	6	3	5	7	24	15	12	27
15	9	12	8	10	11	6	16	30	25	27	30	11	14	10	20	14	18	13	8	8	7	14	8	14	14	30
16	8	13	12	11	9	15	10	25	38	16	15	15	14	14	8	10	13	8	9	5	9	10	3	5	12	38
17	13	20	4	15	17	6	4	10	26	26	27	10	10	14	16	21	9	6	7	4	2	25	20	5	13	27
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	7	19	7	10	( )	19
19	24	12	(CM)	8	28	4	13	13	8	11	8	13	11	15	12	12	11	9	7	4	5	8	11	9	11	28
20	14	12	6	8	21	16	13	17	16	19	17	24	24	19	21	24	17	13	7	5	7	4	9	14	14	24
21	11	6	8	8	20	5	24	29	29	32	18	23	27	33	22	22	17	10	6	9	13	8	7	17	17	33
22	18	24	(CM)	11	8	12	10	24	32	21	23	40	13	16	9	16	8	12	8	9	11	5	8	15	15	40
23	13	23	11	10	12	7	16	24	15	9	14	18	17	16	18	18	10	8	11	6	9	21	28	25	15	28
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	10	19	11	9	8	6	7	17	16	( )	19
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	31	19	14	12	11	10	11	9	10	11	6	5	5	6	6	5	11	31
26	16	4	8	10	5	4	11	26	41	21	17	23	25	14	24	14	15	8	6	3	1	2	3	4	13	41
27	21	12	2	3	20	26	6	7	10	13	14	13	13	14	8	12	11	8	6	4	4	5	6	13	10	26
28	29	17	8	4	7	8	7	9	14	18	14	20	17	15	15	13	13	9	7	4	4	8	10	20	12	29
29	19	13	4	5	10	20	11	38	30	36	14	13	13	12	11	11	10	9	4	2	15	14	7	8	14	38
30	8	10	7	7	5	5	8	23	26	22	22	8	9	9	8	8	9	10	13	11	8	7	6	5	11	26
31	2	3	10	6	16	8	17	26	19	39	32	30	22	31	21	22	23	16	18	20	7	16	28	5	18	39
AV	12	11	8	8	12	10	11	20	22	19	16	16	15	14	14	13	12	10	9	6	8	11	10	10	12	
PK	29	24	18	15	28	26	24	38	45	39	33	40	27	33	34	24	23	16	18	20	25	25	28	25		45

TEMPERATURE @ 10M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	10	9	8	8	( )	12
2	8	7	7	8	7	7	8	11	15	17	19	20	22	20	19	13	13	14	13	12	11	10	9	9	12	22
3	11	11	9	9	8	8	8	11	12	13	15	17	18	18	18	16	17	13	13	12	9	9	8	8	12	18
4	8	7	8	7	7	8	8	12	13	14	17	10	8	8	8	9	10	11	10	8	7	7	5	4	9	17
5	3	2	0	-1	-2	-2	-2	1	3	4	6	6	7	7	9	8	8	8	6	4	2	1	-1	-2	3	9
6	-2	-2	-3	-4	-4	-4	-2	2	6	7	9	10	11	11	12	12	12	11	10	7	6	4	3	3	5	12
7	3	2	2	2	0	1	2	6	12	14	14	14	14	14	12	11	13	8	8	7	6	6	6	7	8	14
8	6	6	6	6	7	7	8	10	13	16	16	17	18	18	17	16	14	13	13	13	12	11	12	11	12	18
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	10	5	3	2	2	2	( )	11
10	2	2	2	2	2	1	3	7	8	8	12	13	13	12	13	12	10	10	8	6	6	4	4	3	7	13
11	2	1	0	1	1	1	2	3	5	8	9	8	6	8	10	11	9	8	6	3	3	1	1	1	4	11
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	1	1	1	0	0	0	1	1	2	( )	2
13	2	2	2	2	1	2	2	(PF)	(PF)	4	7	4	6	7	6	6	5	5	4	3	3	2	2	2	4	7
14	2	2	2	2	2	2	2	3	4	6	8	8	9	11	11	10	12	11	9	7	5	4	3	2	6	12
15	2	2	1	0	0	0	3	6	9	12	14	14	11	10	13	12	13	12	12	9	7	6	4	4	7	14
16	3	3	3	3	3	2	3	7	11	13	14	16	17	17	12	11	12	12	11	9	7	6	5	4	9	17
17	4	3	3	3	3	2	5	8	12	14	14	16	15	15	17	17	17	13	14	12	11	8	7	8	10	17
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	11	10	9	8	( )	12
19	7	7	7	6	4	5	8	11	8	10	9	14	11	11	9	11	11	12	10	8	8	7	7	6	9	14
20	5	4	3	2	1	1	3	7	9	10	11	13	14	16	16	16	14	13	13	11	8	7	6	4	9	16
21	4	3	3	2	2	2	4	8	12	16	17	18	19	21	21	21	21	19	17	14	12	11	9	8	12	21
22	7	6	6	6	5	6	9	12	17	21	22	24	23	18	20	22	21	20	19	16	14	13	12	11	15	24
23	9	9	9	8	8	8	9	13	15	16	17	18	19	21	21	21	21	18	18	16	14	12	11	11	14	21
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	14	12	11	9	7	6	6	( )	14
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	16	17	18	18	18	19	18	19	19	17	16	13	13	12	9	( )	19
26	7	6	6	4	4	6	9	13	18	20	22	23	24	24	24	23	23	23	22	18	16	16	14	14	16	24
27	12	13	14	14	14	12	16	17	19	21	22	23	23	24	22	22	22	21	19	17	15	13	13	13	18	24
28	12	12	11	11	10	8	8	9	11	12	13	15	16	17	17	18	17	16	14	11	8	7	7	6	12	18
29	5	3	2	2	2	2	3	7	12	14	18	18	19	19	20	21	18	17	16	13	13	13	12	11	12	21
30	11	9	8	5	4	3	6	7	10	13	13	11	7	6	6	6	6	6	6	3	3	2	2	1	6	13
31	1	1	1	1	0	0	2	6	9	12	14	17	17	19	19	20	18	18	18	14	11	9	9	9	10	20
AV	5	5	4	4	3	3	5	8	11	13	14	14	14	14	14	14	14	13	12	10	8	7	7	6	10	
PK	12	13	14	14	14	12	16	17	19	21	22	24	24	24	24	23	23	23	22	18	16	16	14	14		24
MN	-2	-2	-3	-4	-4	-4	-2	1	3	4	1	1	1	1	2	1	1	1	0	0	0	1	-1	-2		

MONTHLY MINIMUM = -4

TEMPERATURE @ 30M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	11	10	9	9	( )	13
2	10	9	8	9	8	8	8	11	14	16	18	18	19	19	18	13	13	13	13	13	12	11	11	11	13	19
3	11	11	10	9	9	8	9	11	11	12	13	15	16	16	17	16	16	13	13	12	9	9	9	9	12	17
4	8	8	8	8	8	8	9	11	12	13	15	10	8	8	9	9	10	11	10	9	8	7	6	4	9	15
5	4	2	1	0	-1	-2	-2	-1	2	3	4	4	5	6	7	7	7	7	6	4	3	1	1	-1	3	7
6	-1	-1	-2	-3	-3	-4	-2	2	4	6	8	8	9	10	10	11	11	10	9	8	7	6	4	3	5	11
7	3	3	3	3	2	3	3	6	10	12	13	13	13	13	12	10	13	8	7	7	7	7	7	7	8	13
8	7	7	6	7	7	7	8	9	12	14	14	15	16	16	16	14	14	13	13	13	13	12	12	11	12	16
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	9	5	3	3	3	3 ( )	11
10	3	3	2	3	2	2	3	6	8	8	10	11	11	11	12	11	9	9	8	7	6	4	4	3	6	12
11	3	2	1	1	1	1	2	3	4	7	7	7	4	7	8	9	8	7	6	3	3	2	1	1	4	9
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	2	1	1	1	1	0	0	1	2	2	( )	2
13	2	2	2	2	1	1	2	(PF)	(PF)	4	6	3	4	3	3	6	5	5	4	3	3	-2	1	2	3	6
14	2	2	2	2	2	2	2	3	3	5	7	8	9	9	9	9	11	9	8	7	7	3	3	2	5	11
15	2	2	-6	-9	-8	-2	2	6	9	11	13	13	11	8	8	7	8	11	10	8	7	6	5	5	5	13
16	4	4	3	4	2	2	3	7	9	12	13	14	15	16	11	11	11	11	11	9	8	6	6	5	8	16
17	5	4	2	2	2	3	4	0	1	6	8	7	6	8	3	14	15	13	13	12	13	10	8	9	7	15
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	11	10	8 ( )	12
19	8	8	8	7	6	6	8	9	5	6	8	12	8	9	8	10	10	11	9	8	7	7	7	6	8	12
20	3	5	2	0	1	1	3	4	6	8	9	9	7	8	14	14	13	12	12	11	8	8	8	6	7	14
21	5	3	-7	0	2	3	4	8	11	14	16	17	18	19	19	19	19	18	17	15	13	12	11	8	11	19
22	7	6	7	7	6	7	9	12	16	19	21	22	22	18	19	21	20	19	18	17	15	14	14	13	15	22
23	12	10	10	9	9	9	9	12	14	14	16	17	18	19	19	19	19	18	17	16	14	13	12	11	14	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	12	13	12	11	9	8	7	6	( )	13
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	15	16	17	17	18	17	18	18	17	16	14	14	13	9	( )	18
26	5	7	7	1	5	7	9	13	17	19	20	22	22	23	23	22	22	22	21	19	18	18	17	16	16	23
27	14	14	16	16	14	13	16	17	18	19	20	21	21	22	20	21	21	20	19	17	16	14	14	14	17	22
28	13	12	12	12	11	8	8	7	9	11	12	13	14	15	16	16	16	14	13	11	8	7	7	3	11	16
29	5	-1	-1	3	2	2	3	6	9	13	15	14	16	16	16	16	14	13	12	9	13	13	12	11	10	16
30	9	9	7	6	3	3	1	6	9	11	12	10	7	6	4	4	5	6	6	3	3	3	2	1	6	12
31	2	2	2	1	1	1	2	5	8	11	13	15	16	18	17	18	17	18	17	14	12	11	9	11	10	18
AV	6	5	4	4	4	4	5	7	9	11	12	12	12	13	12	13	13	12	11	10	9	8	7	7	9	
PK	14	14	16	16	14	13	16	17	18	19	21	22	22	23	23	22	22	22	21	19	18	18	17	16		23
MN	-1	-1	-7	-9	-8	-4	-2	-1	1	3	1	1	1	1	2	1	1	1	1	0	0	-2	1	-1		

MONTHLY MINIMUM = -9

TEMPERATURE @ 60M
DEGREE C

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	11	10	9	10	( )	13
2	11	10	9	9	8	8	9	11	14	16	18	19	19	19	18	13	13	13	13	13	12	11	11	11	13	19
3	11	11	9	9	9	8	8	10	11	12	14	16	17	17	17	16	16	13	12	11	8	9	8	9	12	17
4	8	8	8	8	8	8	9	11	12	13	15	11	8	8	8	9	10	11	10	10	8	7	6	4	9	15
5	3	2	1	0	-1	-2	-2	0	2	3	4	5	6	6	7	7	7	7	6	4	2	1	0	0	3	7
6	-1	-1	-2	-3	-3	-3	-2	2	6	7	8	8	9	10	10	10	10	10	9	8	7	7	4	3	5	10
7	3	3	2	3	3	3	4	7	11	12	12	13	12	13	11	10	12	9	8	7	-18	7	7	8	7	13
8	8	8	6	7	7	7	8	9	12	14	14	16	17	17	16	14	14	13	13	13	13	12	12	11	12	17
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	9	5	3	2	3	3	( )	11
10	3	3	2	2	2	2	3	6	8	8	11	12	12	11	12	11	9	9	7	6	6	4	4	3	6	12
11	3	2	1	1	1	1	2	3	4	6	7	7	5	6	8	8	8	7	5	3	2	2	2	1	4	8
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	1	1	1	1	1	1	1	1	1	0	0	1	2	2	( )	2
13	2	2	2	1	1	1	2	(PF)	(PF)	4	6	4	7	8	7	6	5	5	4	3	3	2	2	2	4	8
14	2	2	2	2	2	2	2	3	3	6	8	9	9	9	9	9	10	9	8	7	7	6	5	4	6	10
15	3	3	2	1	1	1	3	6	9	12	13	13	11	9	12	12	13	12	11	8	7	7	6	6	7	13
16	5	4	4	4	4	3	4	7	10	12	13	14	16	16	11	12	12	12	11	8	8	7	6	6	9	16
17	5	4	4	3	3	3	6	8	12	15	13	14	13	13	15	15	16	13	14	13	13	11	9	11	10	16
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	13	12	11	10	8	( )	13
19	8	8	8	7	6	6	8	10	8	9	8	13	10	9	8	10	10	11	9	8	7	7	6	6	8	13
20	4	4	3	2	2	1	3	6	8	11	11	13	13	14	14	14	13	12	12	10	8	8	8	7	8	14
21	6	4	4	4	3	3	4	8	12	15	17	18	19	19	20	20	19	18	17	14	13	12	11	9	12	20
22	8	7	7	7	6	7	9	13	17	21	22	22	22	18	20	21	20	19	18	17	14	14	14	13	15	22
23	12	11	10	9	9	9	10	12	16	16	17	18	18	19	19	19	19	18	18	15	14	13	12	11	14	19
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	12	14	12	11	9	8	7	6	( )	14
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	12	14	15	16	17	17	17	18	18	17	16	15	14	13	9	( )	18
26	8	7	7	6	6	8	10	13	17	19	20	22	23	23	23	22	22	22	21	19	18	18	17	17	16	23
27	15	15	17	16	15	13	16	17	18	19	21	21	22	23	21	21	21	20	19	17	15	14	14	13	18	23
28	12	12	12	12	11	8	7	8	11	12	13	14	14	15	16	16	16	14	13	11	9	8	7	7	11	16
29	6	4	3	3	3	3	3	6	11	15	16	16	17	18	18	18	18	17	16	14	14	13	12	12	11	18
30	11	9	8	5	4	4	5	6	10	12	13	11	7	6	5	6	6	6	6	3	2	2	2	1	6	13
31	1	2	2	1	1	1	3	5	9	12	14	16	17	18	18	18	18	18	17	14	12	11	10	12	10	18
AV	6	6	5	5	4	4	5	8	11	12	13	13	13	13	13	13	13	13	12	10	8	8	8	7	9	
PK	15	15	17	16	15	13	16	17	18	21	22	22	23	23	23	22	22	22	21	19	18	18	17	17		23
MN	-1	-1	-2	-3	-3	-3	-2	0	2	3	1	1	1	1	1	1	1	1	1	0	-18	1	0	0		

MONTHLY MINIMUM = -18

DELTA TEMPERATURE 60-10M
DEGREE C*100

CB-TRACT
TRAILER AA23
MAY ,1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	83	78	78	61	83	( )	83
2	178	211	172	122	89	61	139	78	-39	-11	-44	0	-156	-72	-67	-22	22	-22	-17	56	100	50	44	106	41	211
3	-6	-50	-44	-33	-28	-17	-22	-56	-67	-78	-89	-122	-122	-139	-139	-106	-94	-72	-56	-50	-61	-28	-50	-22	-65	-6
4	6	56	17	33	33	28	33	-33	-83	-111	-144	-44	22	-6	11	-39	-33	-6	-6	89	56	33	56	-6	-2	89
5	-22	-6	-17	17	-6	-6	-39	-44	-78	-100	-122	-111	-94	-83	-128	-133	-122	-106	-67	-17	-50	44	39	72	-49	72
6	-6	-28	50	67	67	50	-28	0	-44	-56	-78	-111	-122	-122	-144	-117	-133	-106	-83	-22	94	200	89	33	-23	200
7	-78	78	-6	-33	206	178	183	67	-72	-106	-111	-106	-144	-111	-122	-100	-122	-39	-6	28	83	83	83	83	-3	206
8	106	111	-11	11	-17	22	-6	-61	-61	-106	-106	-94	-122	-111	-89	-94	-83	-67	-39	-22	-11	-6	-28	-22	-38	111
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-72	-72	-44	-11	-33	44	61	( )	61
10	67	61	17	0	-44	-6	-6	-67	-72	-78	-89	-117	-122	-111	-128	-117	-111	-83	-67	-44	-17	-22	-17	-17	-50	67
11	-6	-6	11	-17	-50	-56	-61	-67	-78	-117	-133	-111	-83	-178	-183	-150	-117	-78	-89	-44	-56	-17	0	-6	-70	11
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-56	28	-156	0	-111	-44	-28	-17	-22	-72	-44	-28	39	-22	-38	39
13	-33	-33	-39	-44	-44	-50	-44	(PF)	(PF)	-61	-61	-100	100	144	89	6	-67	-72	-83	-72	-133	-122	-39	-39	-36	144
14	-44	-56	-56	-67	-61	-56	-39	-67	-117	-17	61	28	-22	-72	-156	-44	-122	-56	-72	-67	-33	78	144	94	-34	144
15	67	94	56	44	0	-6	6	22	28	33	-83	-28	-106	-78	-117	-11	-33	0	-61	-72	-56	6	56	67	-7	94
16	106	78	50	11	111	94	72	6	-11	-50	-61	-56	-67	-94	-128	-6	-17	-100	-56	-117	-11	6	39	44	-6	111
17	89	6	22	28	-6	72	28	17	33	56	-94	-89	-144	-111	-106	-117	-50	-28	0	61	122	172	161	256	16	256
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	11	78	11	-11	0	( )	78
19	44	67	117	117	94	83	22	-44	-111	-106	-106	-94	-83	-111	-83	-94	-106	-94	-83	-61	-56	-50	-67	-78	-37	117
20	-89	-78	-50	11	17	-6	-6	-44	-33	39	-67	22	-106	-78	-83	-89	-106	-72	-61	-50	28	67	144	156	-22	156
21	89	72	111	161	111	122	0	-6	-6	-22	-6	39	-33	-67	-44	-72	-89	-78	-61	-50	44	61	106	100	20	161
22	56	67	61	33	56	67	50	33	11	33	-6	-172	-94	-44	-22	-39	-100	-67	-56	17	11	128	183	183	16	183
23	233	89	39	72	89	39	67	33	11	-11	-67	-22	-39	-78	-89	-94	-106	-11	-22	-67	17	11	28	44	7	233
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-106	-22	-61	-17	-78	-78	-33	44	-22	( ) 44
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	-28	-56	-111	-117	-128	-122	-139	-117	-117	-106	-61	-44	72	111	33	-39	-60	111
26	6	83	89	83	94	111	83	33	-6	-28	-83	-111	-83	-117	-94	-89	-78	-106	-50	39	211	222	194	206	25	222
27	217	211	172	106	50	61	0	-50	-67	-100	-133	-128	-128	-111	-94	-83	-78	-72	-50	-11	-6	11	0	-17	-13	217
28	0	-28	39	44	78	-22	-89	-89	-67	-39	-61	-72	-106	-139	-139	-150	-122	-100	-78	-22	28	33	17	-6	-45	78
29	17	-11	39	50	39	56	28	-11	-33	44	-144	-100	-144	-150	-156	-161	-100	-67	-33	78	33	-33	-67	17	-34	78
30	11	-39	-56	-61	-50	-17	-61	-67	-6	-61	-56	-67	-33	-78	-83	-39	-39	-50	-72	-78	-78	-61	-33	-61	-51	11
31	-6	44	44	6	-22	22	33	0	6	11	-11	-122	44	-117	-67	-72	-39	-22	-72	-61	28	133	89	133	-1	133
AV	40	40	33	30	32	33	14	-17	-40	-42	-76	-73	-84	-87	-97	-82	-79	-63	-52	-23	12	36	45	45	-21	
PK	233	211	172	161	206	178	183	78	33	56	61	39	100	144	89	6	22	0	0	89	211	222	194	256		256
MN	-89	-78	-56	-67	-61	-56	-89	-89	-117	-117	-144	-172	-156	-178	-183	-161	-133	-106	-89	-117	-133	-122	-67	-78		

MONTHLY MINIMUM = -183

TEMPERATURE MIDM
DEGREE C

CB TRACT
MRI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	7	8	7	7	9	12	13	14	15	8	9	11	11	11	11	11	9	7	5	4	3	9	15
5	2	0	-2	-3	-4	-4	-3	1	3	4	5	6	6	7	7	8	8	8	7	4	0	-3	-4	-6	2	8
6	-6	-6	-7	-7	-8	-7	-5	0	5	6	7	8	9	10	10	11	11	11	11	6	3	1	0	-1	3	11
7	-1	-2	-2	-3	-3	-2	0	4	10	12	13	13	13	14	12	12	14	9	9	7	6	6	5	5	6	14
8	4	5	7	7	8	9	9	10	14	15	16	17	18	18	17	17	16	15	15	14	14	11	12	12	13	18
9	12	12	11	9	11	11	13	13	14	14	15	16	16	16	15	14	13	13	10	6	5	5	3	3	11	16
10	3	3	2	2	4	3	5	8	10	10	11	13	13	12	13	11	10	11	9	8	7	5	5	4	8	13
11	2	0	-1	0	0	0	2	3	4	7	8	8	7	7	9	10	9	8	7	5	3	1	0	0	4	10
12	0	0	1	0	-1	0	1	2	2	2	2	2	1	0	0	0	(IM)	(IM)	1	0	1	1	3	4	1	4
13	3	3	3	3	3	3	3	(IM)	(IM)	5	7	5	7	8	8	8	7	7	6	5	3	2	1	1	5	8
14	1	1	2	2	2	1	2	4	5	(IM)	9	10	10	10	10	12	12	11	10	8	6	4	2	0	6	12
15	0	-1	-1	-2	-2	-2	1	5	9	12	13	13	12	11	11	12	13	13	12	8	5	4	3	2	6	13
16	2	1	1	1	1	0	2	6	11	12	13	14	15	15	12	12	13	12	12	9	7	6	4	3	8	15
17	2	2	2	1	0	1	3	7	12	14	14	15	14	15	17	17	16	15	15	11	9	7	6	6	9	17
18	6	5	5	4	5	7	8	13	14	16	18	19	20	20	21	21	21	20	14	12	11	10	9	7	13	21
19	6	5	5	5	4	4	7	10	8	11	11	14	12	10	10	12	12	12	11	10	9	9	8	8	9	14
20	7	6	3	1	0	0	3	7	8	10	10	12	13	13	13	14	14	14	14	10	7	5	4	(IM)	8	14
21	1	1	0	-1	-2	-1	3	8	11	15	16	17	18	19	20	20	20	20	18	14	10	8	6	5	10	20
22	4	3	3	2	1	2	6	11	15	18	22	22	21	21	22	22	22	21	18	14	12	9	8	7	13	22
23	6	5	5	5	5	6	7	12	15	16	17	17	18	19	20	20	20	20	19	15	12	10	8	6	13	20
24	5	4	3	4	4	3	6	10	11	13	15	16	17	17	16	12	14	15	14	11	10	7	4	2	10	17
25	1	0	1	1	1	2	4	7	13	14	15	16	17	18	18	18	19	19	18	16	13	10	8	6	11	19
26	5	4	3	2	2	3	7	12	17	19	20	21	22	23	24	23	23	23	22	18	14	11	10	8	14	24
27	8	8	9	10	10	11	15	18	19	20	21	21	22	22	21	22	22	21	20	18	17	14	15	12	17	22
28	13	12	9	9	7	8	9	9	10	11	13	14	15	15	17	17	16	16	14	11	6	5	5	5	11	17
29	4	2	0	0	0	1	3	7	10	14	16	18	18	19	20	20	19	18	17	14	15	13	11	11	11	20
30	10	11	9	6	5	4	6	8	11	11	12	12	9	7	7	7	7	8	7	5	4	4	2	1	7	12
31	0	0	-1	-2	-2	-1	1	3	7	11	13	15	16	17	18	19	19	19	17	14	10	7	6	7	9	19
AV	4	3	3	2	2	2	4	8	10	12	13	14	14	14	14	14	15	15	13	10	8	6	5	4	9	
MX	13	12	11	10	11	11	15	18	19	20	22	22	22	23	24	23	23	23	22	18	17	14	15	12		24
MN	-6	-6	-7	-7	-8	-7	-5	0	2	2	2	2	1	0	0	0	7	7	1	0	0	-3	-4	-6		

MONTHLY MINIMUM = -8

RELATIVE HUMIDITY @ 3M
PERCENT

CB-TRACT
TRAILER AA23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	48	49	55	55	55	58	57	51	41	37	31	27	92	70	39	42	69	48	41	50	58	63	72	74	53	92
2	74	75	80	79	79	81	82	78	59	46	41	35	29	22	24	24	78	74	77	77	75	73	73	74	63	82
3	78	72	72	74	79	82	86	89	87	75	67	40	32	31	29	29	35	56	52	52	74	82	80	79	64	89
4	85	86	86	87	89	89	89	70	56	53	41	70	75	82	81	78	74	65	70	74	78	87	90	61	76	90
5	49	58	64	66	59	59	60	61	51	41	34	28	26	22	16	12	8	8	8	10	19	23	24	26	35	66
6	32	34	38	38	38	38	41	31	22	19	17	15	12	12	11	11	11	11	11	16	21	22	26	30	23	41
7	33	37	44	53	54	58	60	46	47	32	21	19	19	19	31	43	29	82	75	73	70	70	62	57	47	82
8	62	68	84	73	75	65	68	55	37	23	21	19	16	14	14	15	20	20	20	19	19	22	22	32	37	84
9	33	29	29	29	24	22	23	23	22	21	20	18	14	12	15	18	18	19	28	97	99	100	99	100	38	100
10	100	94	94	88	89	93	94	66	45	31	29	27	16	12	13	14	15	28	27	30	44	52	60	71	51	100
11	75	80	88	96	99	99	99	98	98	85	66	22	35	67	60	54	35	40	43	61	80	91	97	97	74	99
12	98	98	98	98	98	98	98	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
13	99	99	98	97	97	97	97	91	89	89	79	68	76	68	66	60	56	59	62	61	70	80	90	91	81	99
14	92	91	91	91	92	92	92	92	87	80	72	60	46	41	41	39	40	35	37	44	50	59	72	80	67	92
15	82	83	83	89	89	89	89	89	62	52	35	28	24	27	69	41	41	35	32	35	43	68	76	82	60	89
16	83	87	86	89	89	92	93	93	72	57	46	39	34	24	20	18	45	40	37	45	46	66	79	84	61	93
17	88	91	93	93	94	95	95	96	96	75	49	34	30	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	96
18	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
19	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
20	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
21	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
22	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
24	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	52	56	48	38	29	30	30	45	60	46	47	53	52	52	59	71	( )	71
25	72	78	80	83	85	86	84	72	42	33	30	28	25	24	20	19	18	18	18	20	27	32	33	47	45	86
26	67	81	85	87	88	87	76	58	39	28	20	16	13	10	10	12	14	13	12	12	13	13	13	14	37	88
27	16	21	20	20	20	26	27	25	25	24	23	22	20	18	19	19	18	18	19	23	30	35	36	36	23	36
28	40	43	48	54	56	66	66	67	57	44	43	40	40	38	29	26	21	17	17	18	22	30	34	37	40	67
29	42	51	58	59	59	60	63	50	39	34	30	29	27	25	24	23	22	28	30	35	39	38	38	43	39	63
30	45	48	65	81	93	95	84	78	62	55	48	56	95	100	99	98	96	94	93	100	100	100	100	100	83	100
31	100	100	100	100	100	100	100	97	77	56	39	1	15	16	12	12	12	13	12	21	31	35	35	31	51	100
AV	66	69	72	74	75	76	76	70	59	50	42	35	38	37	36	35	39	40	40	47	52	58	61	63	54	
PK	100	100	100	100	100	100	100	99	99	99	99	99	99	100	99	99	99	99	99	100	100	100	100	100		100
MN	16	21	20	20	20	22	23	23	22	19	17	1	12	10	10	11	8	8	8	10	13	13	13	14		

MONTHLY MINIMUM = 1

DIRECT SOLAR RADIATION
LANGLEY

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0
2	0	0	0	0	0	3	10	15	42	35	70	65	72	45	20	10	15	9	3	0	0	0	0	0	414	72
3	0	0	0	0	0	0	6	15	24	27	57	63	81	63	60	27	24	6	3	0	0	0	0	0	456	81
4	0	0	0	0	0	0	12	18	18	27	54	6	6	6	6	12	6	6	6	0	0	0	0	0	183	54
5	0	0	0	0	0	3	9	33	39	54	69	60	60	57	69	54	39	21	6	0	0	0	0	0	573	69
6	0	0	0	0	0	3	15	33	48	60	72	81	78	78	63	51	33	21	6	0	0	0	0	0	642	81
7	0	0	0	0	0	3	9	30	48	51	48	33	45	33	21	30	21	6	6	0	0	0	0	0	384	51
8	0	0	0	0	0	0	9	18	42	57	45	57	63	48	30	33	18	9	7	0	0	0	0	0	436	63
9	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	7	0	0	0	0	0	7	7
10	0	0	0	0	0	3	15	27	48	30	72	72	60	33	57	27	27	9	3	0	0	0	0	0	483	72
11	0	0	0	0	0	0	7	18	30	33	45	36	42	45	45	39	18	12	3	0	0	0	0	0	373	45
12	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	( )
13	0	0	0	0	0	0	0	(PF)	(PF)	(PF)	15	33	18	66	63	48	24	12	6	3	0	0	0	0	288	66
14	0	0	0	0	0	3	6	9	15	27	63	36	45	45	30	33	21	15	3	0	0	0	0	0	351	63
15	0	0	0	0	0	3	18	30	51	63	75	75	15	69	48	51	39	21	6	0	0	0	0	0	564	75
16	0	0	0	0	0	3	15	30	45	56	72	81	81	63	36	33	27	21	6	0	0	0	0	0	569	81
17	0	0	0	0	0	3	12	33	48	63	51	81	42	33	54	27	36	9	6	0	0	0	0	0	498	81
18	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	0	0	0	0	0	0	0
19	0	0	0	0	0	3	18	42	21	30	33	60	36	15	21	18	21	18	6	0	0	0	0	0	342	60
20	0	0	0	0	0	3	18	30	51	66	42	81	75	75	60	54	27	15	9	0	0	0	0	0	606	81
21	0	0	0	0	0	3	18	36	51	66	75	81	81	75	66	51	36	21	6	0	0	0	0	0	666	81
22	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
23	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	0	( )
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	8	31	24	9	1	0	0	0	0	73	31
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	51	64	67	83	78	69	67	46	41	23	2	1	0	0	0	0	592	83
26	0	0	0	0	0	2	16	36	50	64	74	80	82	77	55	16	35	25	9	1	0	0	0	0	622	82
27	0	0	0	0	0	4	19	26	48	64	76	79	82	74	51	50	40	26	9	1	0	0	0	0	649	82
28	0	0	0	0	0	3	16	28	52	48	55	46	47	50	49	46	40	25	10	1	0	0	0	0	514	55
29	0	0	0	0	0	4	10	28	51	65	68	57	74	67	53	58	28	19	4	0	0	0	0	0	586	74
30	0	0	0	0	0	2	12	22	45	60	43	24	6	22	14	19	6	8	2	0	0	0	0	0	285	60
31	0	0	0	0	0	4	14	40	52	62	76	80	82	79	64	59	28	22	10	1	0	0	0	0	673	82
TL	0	0	0	0	0	55	285	598	970	1188	1434	1435	1399	1283	1087	876	668	404	143	4	0	0	0	0	11827	
PK	0	0	0	0	0	4	19	42	52	66	76	83	82	79	69	59	41	26	10	1	0	0	0	0		83

BAROMETHIC PRESSURE
MILLIBARS

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE	PEAK
1	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
2	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
3	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
4	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
5	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
6	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
7	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
8	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
9	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
10	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
11	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
12	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
13	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
14	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
15	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
16	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
17	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )	( )
18	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(OR)	(OR)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	778	778	779	779	779	( )	779
19	779	779	779	779	779	778	778	779	780	780	780	779	780	780	781	781	781	781	781	782	782	783	784	784	780	784
20	784	784	784	784	784	785	785	785	785	781	782	782	782	782	782	782	782	782	782	782	782	782	782	782	783	785
21	782	782	782	782	782	782	782	782	783	782	783	782	782	782	781	781	781	781	781	781	781	781	781	781	782	783
22	780	780	780	780	780	780	780	780	780	780	780	780	779	779	778	778	778	778	778	778	778	779	779	779	779	780
23	778	779	779	779	779	780	780	781	781	781	781	781	781	780	780	779	779	780	780	780	780	781	780	781	780	781
24	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	780	780	780	780	780	780	781	780	780	( )	781
25	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	(PF)	779	778	777	777	776	776	776	775	775	774	774	774	774	775	775	775	776	779
26	776	776	775	775	775	775	776	776	776	776	776	776	775	775	775	774	774	774	774	774	774	775	774	775	775	776
27	774	774	775	775	775	775	775	776	776	776	775	775	774	774	774	773	773	772	772	773	773	773	773	773	774	776
28	772	773	773	773	773	775	775	776	776	776	776	775	775	775	775	775	775	776	776	777	777	778	778	778	775	778
29	777	777	777	777	776	777	777	777	776	776	776	775	775	775	774	774	774	774	774	774	775	775	775	775	776	777
30	775	775	775	775	775	776	776	776	776	776	776	776	777	778	778	779	779	779	779	780	781	781	781	781	778	781
31	781	782	782	782	782	782	782	782	782	782	782	782	781	781	780	779	779	778	778	778	778	778	777	776	780	782
AV	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	
PK	784	784	784	784	784	785	785	785	785	782	783	782	782	782	782	782	782	782	782	782	782	783	784	784		785
MN	772	773	773	773	773	775	775	776	776	776	775	775	774	774	774	773	773	772	772	773	773	773	773	773		

MONTHLY MINIMUM = 772

PRECIPITATION
CH*100

CB-TRACT
TRAILER AB23
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TL	PEAK
1													63		3	3	3								71	63
2															5		13								18	13
3													5	3	3	3									13	5
4																									( )	
5																									( )	
6																									( )	
7																	8								8	8
8																									( )	
9																						10			10	10
10																									( )	
11																									( )	
12									3	5	5	20	13	25	23	36	8	46	5	25	5	13	28	18	277	46
13	10	8		8	5																				30	10
14																									( )	
15							(TR)	3							8										10	8
16										3															3	3
17													(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	
18	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
19	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
20	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
21	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
22	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
23	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )	( )
24	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)											(TR)	(TR)	(TR)			( )	
25																									( )	
26																									( )	
27																									( )	
28																									( )	
29																						3			3	3
30							(TR)						10						8	3					20	10
31							3																		3	3
TL	10	8	( )	8	5	( )	3	3	3	8	5	20	91	28	41	41	30	46	13	28	5	25	28	18	( )	
PK	10	8		8	5		3	3	3	5	5	20	63	25	23	36	13	46	8	25	5	13	28	18		63

PRECIPITATION
CM*100

CB (NACI
MKI AD20
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1														46	3	3						(TR)	(TR)	(TR)	51
2					3	3	3	(TR)	3	3											(TR)	(TR)			13
3					(TR)	(TR)					51	5	3	5	3			3							69
4					(TR)	(TR)																			
5									(TR)	(TR)															
6																									
7																									
8																									
9																			5	3	3	(TR)	(TR)	(TR)	10
10	(TR)																								
11																									
12									3	3	18	18	30	18	53	46	25	18	28	33	33	13	13	5	356
13		3	5	8	5	3	(TR)	(TR)	(TR)			5	3												30
14							(TR)	(TR)	(TR)	(TR)	(TR)														
15							(TR)																		
16																									
17																									
18																									
19															10										10
20																							(TR)	(TR)	
21																						(TR)			
22																					(TR)				
23																							(TR)		
24																									
25																							(TR)	(TR)	
26																								(TR)	
27																							(TR)	(TR)	
28																							(TR)	(TR)	
29																									
30														3	10						8	3	(TR)	(TR)	23
31																									
TL		3	5	8	8	5	3		5	5	69	28	36	71	79	48	25	20	33	36	43	15	13	5	561

PRECIPITATION
CM*100

CB TRACT
MRI AD28
MAY 1982
CATHEDRAL BLUFFS SHALE OIL CO.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1														51				3							53
2																		18							18
3						(TR)	(TR)	3	(TR)	3															5
4												10	13	3	5										30
5																									
6																									
7																			13						13
8			5																						5
9																					3	3			5
10						3														3					5
11		(TR)	(TR)																	3	(TR)	(TR)	(TR)		3
12										5		23	13	3	3	20	25	25	25	18			20	25	206
13	25	10	13	25	23	13	13	5	3	8														3	140
14																							(TR)	(TR)	
15	(TR)																					3	(TR)	(TR)	3
16	(TR)																				(TR)				
17								3																	3
18																									
19									(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	( )
20	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)	(IM)														
21																									
22				5																				3	8
23	(TR)	(TR)	(TR)	(TR)	(TR)															(TR)	(TR)	3	(TR)	3	5
24								(TR)							5										5
25																			(TR)	(TR)	(TR)	(TR)	3	(TR)	3
26																							(TR)	(TR)	
27																								(TR)	
28	(TR)																							(TR)	
29	(TR)																								
30			(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	( )
31	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)	(OE)														
TL	25	10	18	30	23	15	13	10	3	15		33	25	56	13	20	25	46	38	23	3	8	23	33	( )

STABILITY CLASS USING DT/DZ
DT 60-10M
WS 10M

CB-TRACT
TRAILER AA23
MAY 1982
OCCIDENTAL OIL SHALE, INC.

HOUR (LOCAL STANDARD TIME)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	AVE
1	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	F	F	F	E	F	( )
2	F	F	F	F	F	E	F	F	D	E	D	E	A	D	D	E	E	E	E	E	F	E	E	F	E
3	E	D	D	D	D	E	E	D	D	C	C	D	D	D	D	D	B	D	D	D	D	D	D	E	D
4	E	E	E	E	E	E	E	D	C	B	B	D	E	E	D	D	D	E	E	F	E	E	E	E	E
5	E	E	E	E	E	E	D	D	C	C	C	B	B	C	B	C	B	B	D	E	D	E	( )	E	D
6	E	D	E	E	E	E	( )	E	D	D	C	B	B	B	B	B	B	B	C	E	F	F	F	E	D
7	C	F	E	D	F	F	F	( )	D	A	B	B	B	B	D	B	B	D	E	E	F	F	F	E	D
8	F	F	E	E	D	E	E	D	D	D	C	D	D	D	D	D	D	D	D	D	E	E	D	E	D
9	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	D	D	E	D	E	E	( )
10	E	E	E	D	D	E	E	D	D	C	D	D	D	D	D	C	C	C	D	D	E	E	E	E	D
11	E	E	E	E	D	D	D	D	C	A	B	B	C	B	A	B	B	C	B	D	D	( )	E	E	C
12	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	D	E	B	E	B	D	D	E	E	D	D	D	D	E	( )
13	D	D	D	D	D	D	D	( )	( )	D	D	C	E	E	D	E	D	D	C	D	A	A	D	D	D
14	D	D	D	D	D	D	D	D	A	E	E	E	E	D	B	D	A	D	D	D	D	F	F	F	D
15	E	F	E	E	E	E	( )	( )	E	E	C	D	A	C	B	E	D	E	D	D	D	E	E	E	D
16	F	F	E	E	F	F	( )	E	E	D	D	D	D	B	D	E	E	B	D	A	E	E	E	E	D
17	F	( )	E	E	E	E	E	E	E	E	B	C	B	B	B	B	D	D	E	E	E	F	F	F	D
18	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	E	F	E	E	E	( )
19	E	E	F	F	F	F	E	D	D	B	D	B	C	B	C	B	B	B	C	D	D	D	D	C	D
20	B	C	D	E	E	E	E	D	D	E	D	E	A	C	C	B	A	D	D	D	E	E	F	F	D
21	F	E	( )	F	F	F	( )	E	E	E	E	E	D	D	D	D	B	C	D	D	E	E	( )	F	E
22	E	E	E	E	E	E	E	E	E	E	E	A	B	D	E	D	B	D	D	E	E	F	F	F	E
23	F	( )	E	E	F	E	E	E	E	E	D	E	D	C	B	B	B	E	E	D	E	E	E	E	D
24	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	B	E	D	E	C	C	D	E	E	( )
25	( )	( )	( )	( )	( )	( )	( )	( )	D	D	B	B	C	C	D	D	C	C	D	D	E	F	E	D	( )
26	E	F	F	F	F	F	F	E	E	D	C	B	C	B	B	B	C	B	D	E	E	E	E	F	D
27	F	F	D	E	E	E	E	D	D	B	B	C	C	C	D	C	C	D	D	E	D	E	E	E	D
28	E	D	E	E	E	E	B	B	D	D	D	D	B	B	B	B	B	B	C	E	E	E	E	E	D
29	E	E	E	E	E	E	E	E	D	E	B	C	C	D	C	C	C	D	D	E	E	D	D	E	D
30	E	D	D	D	D	E	D	D	E	D	D	D	D	C	C	D	D	D	D	C	C	D	D	D	D
31	E	E	E	E	E	E	E	E	E	E	E	A	E	A	D	D	D	E	D	D	E	F	F	F	E
AVE	E	E	E	E	E	E	E	D	D	D	C	C	C	C	C	C	C	D	D	D	E	E	E	E	D

TOTAL OCCURRENCES: A= 15 B= 71 C= 57 D=199 E=232 F= 68 HOURS MISSING=102

(08/19/82-KPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITRIC OXIDE (NO) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		6	2	2	2	2	3	2	2	3	2	3	7	6	17	40	23	2	
GT	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
60. -	65. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
55. -	60. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
50. -	55. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
45. -	50. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
40. -	45. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
35. -	40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0 :	1
30. -	35. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
25. -	30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
20. -	25. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0 :	3
15. -	20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0 :	5
10. -	15. :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	2	0 :	9
5. -	10. :	1	0	0	0	0	0	0	0	0	0	0	2	1	4	15	6	0 :	29
LT	5. :	41	21	18	18	10	18	24	33	65	69	74	35	39	36	42	51	12 :	606
TOTAL	:	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.		1	0	0	0	0	0	0	0	0	0	0	0	1	3	6	3	0	1

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OXIDES OF NITROGEN (NOX) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	15	9	7	9	9	13	11	5	13	9	15	26	16	45	105	58	11	
GT 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
60. - 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
55. - 60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
50. - 55.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
45. - 50.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
40. - 45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. - 40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
30. - 35.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	0	9
25. - 30.	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	1	0	6
20. - 25.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	7	0	17
15. - 20.	1	0	0	0	0	0	0	0	0	0	1	1	3	8	12	4	0	30
10. - 15.	2	0	0	0	0	1	1	0	2	0	0	0	2	6	7	9	1	31
5. - 10.	14	4	6	5	3	5	4	6	6	7	7	5	13	11	20	33	6	155
LT 5.	25	17	12	13	7	12	19	27	57	62	66	29	22	14	2	3	5	392
TOTAL	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.	4	3	4	4	4	4	3	3	3	3	3	4	5	10	22	12	5	7

0 = NO OBSERVATIONS

(09/16/82-)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

NITROGEN DIOXIDE (NO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	7	7	7	9	5	7	11	5	9	7	9	15	11	18	48	22	9	
GT 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60. - 65.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55. - 60.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. - 55.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45. - 50.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
40. - 45.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
35. - 40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
30. - 35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. - 30.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
20. - 25.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	6
15. - 20.	0	0	0	0	0	0	0	0	0	0	0	1	0	3	11	3	0	18
10. - 15.	0	0	0	0	0	0	1	0	0	0	0	2	1	2	14	8	0	28
5. - 10.	8	3	4	3	3	5	0	6	7	5	4	4	12	15	20	26	6	131
LT 5.	34	18	14	15	7	13	23	27	58	64	70	30	27	22	16	22	6	466
TOTAL	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.	2	2	3	3	3	3	2	2	2	2	2	3	3	5	12	7	4	4

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

OZONE (03)

CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	103	103	105	96	78	84	92	82	96	117	135	129	103	137	101	117	88	
GT 140. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
130. - 140. :	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0 :	2
120. - 130. :	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0 :	2
110. - 120. :	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	1	0 :	5
100. - 110. :	1	2	1	0	0	0	0	0	0	0	6	0	1	1	3	3	0 :	18
90. - 100. :	9	3	0	1	0	0	2	0	6	10	2	1	2	10	18	19	0 :	83
80. - 90. :	14	10	5	2	0	2	2	1	15	19	17	7	5	4	16	11	2 :	132
70. - 80. :	14	4	7	6	1	0	2	9	18	16	19	8	18	8	13	10	2 :	155
60. - 70. :	4	1	2	7	3	5	11	18	18	15	14	8	8	6	12	9	3 :	144
50. - 60. :	0	0	2	1	3	4	6	5	8	6	11	7	1	7	4	6	2 :	73
40. - 50. :	0	1	1	1	3	7	1	0	0	0	4	5	5	3	1	1	3 :	36
30. - 40. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0 :	4
20. - 30. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 20. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
TOTAL :	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	12	654
MEAN CONC.	81	82	73	70	56	57	65	66	73	78	74	68	71	77	76	80	62	74

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

CARBON MONOXIDE (CO)

CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
	344	114	574	229	114	114	114	114	229	114	229	114	114	114	114	114	114	
GT 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
600. - 650. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
550. - 600. :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
500. - 550. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
450. - 500. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
400. - 450. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
350. - 400. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
300. - 350. :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	1
250. - 300. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
200. - 250. :	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0 :	3
150. - 200. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
100. - 150. :	10	3	1	3	3	4	4	6	17	20	13	10	13	10	16	14	3 :	150
50. - 100. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
LT 50. :	31	18	13	14	7	14	20	27	47	48	59	27	27	32	55	44	9 :	492
TOTAL :	42	21	15	18	10	18	24	33	65	68	73	37	40	42	71	58	12	647
MEAN CONC.	35	16	45	31	34	25	19	20	33	33	23	31	37	27	25	27	28	29

0 = NO OBSERVATIONS

(09/16/82-RPI)

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

SULFUR DIOXIDE (SO2) CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3		WIND DIRECTION																
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		5	0	0	0	0	0	2	2	2	2	2	0	0	10	15	7	0	
GT	13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
12. -	13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. -	12.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. -	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
9. -	10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. -	9.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. -	8.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
6. -	7.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. -	6.	1	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	8
4. -	5.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. -	4.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. -	3.	2	0	0	0	0	0	1	1	1	4	6	0	0	6	12	11	0	44
1. -	2.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LT	1.	39	21	17	18	10	18	23	32	64	65	68	36	40	33	51	47	12	594
TOTAL		42	21	17	18	10	18	24	33	65	69	74	36	40	42	71	59	12	651
MEAN CONC.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

0 = NO OBSERVATIONS

II-2+2

NUMBER OF ONE HOUR SAMPLES BY CONCENTRATION AND WIND DIRECTION AT 10 METERS

HYDROGEN SULFIDE (H2S) — CATHEDRAL BLUFFS SHALE OIL

TRAILER AB23 — PERIOD(5/01/82 TO 5/31/82)

CONCENTRATION MAX UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
		1	2	1	2	1	1	2	1	1	2	2	2	4	4	4	4	0	
GT	13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. -	13.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. -	12.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. -	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. -	10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. -	9.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. -	8.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. -	7.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. -	6.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. -	5.	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	5
3. -	4.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. -	3.	0	1	0	1	0	0	1	0	0	3	2	6	4	1	4	1	0	24
1. -	2.	1	0	2	2	1	4	5	2	3	11	5	4	4	8	10	7	0	69
LT	1.	41	20	15	15	9	14	18	31	62	55	67	26	31	31	56	50	12	553
TOTAL		42	21	17	18	10	18	24	33	65	69	74	36	40	42	71	59	12	651
MEAN CONC.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = NO OBSERVATIONS

(09/16/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		6	4	5	2	1	2	3	4	8	7	7	6	6	6	6	6	0	
GT	11. :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 :	0
8. -	11. :	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0 :	4
5. -	8. :	1	0	2	0	0	0	0	0	15	22	13	4	1	4	5	4	0 :	71
3. -	5. :	9	3	5	0	0	0	1	7	18	20	16	7	13	18	26	20	0 :	163
1. -	3. :	21	9	5	8	6	13	15	16	13	13	25	18	21	16	31	29	0 :	259
LT	1. :	11	9	6	10	4	5	8	10	15	14	20	8	5	4	9	7	0 :	145
TOTAL	:	42	21	18	18	10	18	24	33	65	69	74	37	40	42	71	60	0	642
PERCENT		7.	3.	3.	3.	2.	3.	4.	5.	10.	11.	12.	6.	6.	7.	11.	9.	0.	100.

0 = NO OBSERVATIONS

(08/19/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

30 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		5	4	7	3	2	3	4	6	12	10	9	8	8	8	8	8	0	
GT	11.	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
8. -	11.	0	0	0	0	0	0	0	0	11	11	10	3	1	1	2	2	0	41
5. -	8.	1	0	5	0	0	0	0	6	17	22	19	9	5	13	13	16	0	126
3. -	5.	15	6	2	2	0	9	5	11	6	13	5	5	19	20	30	20	0	168
1. -	3.	15	9	8	7	9	9	13	13	9	4	8	11	18	16	23	21	0	193
LT	1.	15	3	8	4	6	5	2	8	5	15	5	8	9	7	8	8	0	116
TOTAL		46	18	23	13	15	23	20	38	52	65	47	36	52	57	76	67	0	648
PERCENT		7.	3.	4.	2.	2.	4.	3.	6.	8.	10.	7.	6.	8.	9.	12.	10.	0.	100.

0 = NO OBSERVATIONS

(08/19/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

60 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AA23 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		8	5	8	3	3	4	4	8	12	11	11	9	8	8	9	9	0	
GT 11.	:	0	0	0	0	0	0	0	0	6	2	1	0	0	0	0	0	0	: 9
8. - 11.	:	1	0	1	0	0	0	0	2	15	19	14	5	2	2	6	8	0	: 75
5. - 8.	:	3	2	5	0	0	0	0	5	15	19	19	6	7	13	18	19	0	: 131
3. - 5.	:	15	6	6	1	2	7	8	8	13	10	5	7	8	20	30	28	0	: 174
1. - 3.	:	26	12	10	11	7	12	9	9	6	7	9	6	12	13	23	22	0	: 194
LT 1.	:	8	4	3	7	3	1	2	2	4	1	6	5	9	4	6	4	0	: 69
TOTAL	:	53	24	25	19	12	20	19	26	59	58	54	29	38	52	83	81	0	652
PERCENT		8.	4.	4.	3.	2.	3.	3.	4.	9.	9.	8.	4.	6.	8.	13.	12.	0.	100.

0 = NO OBSERVATIONS

(08/19/82-RPI)

FREQUENCY TABLE OF WIND SPEED BY DIRECTION

10 METER LEVEL

CATHEDRAL BLUFFS SHALE OIL

STATION AD20 PERIOD(5/01/82 TO 5/31/82)

WIND SPEED MAX METERS/SEC		WIND DIRECTION																	
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VAR	TOTAL
		3	3	3	3	5	5	7	7	6	5	5	6	6	6	4	5	0	
GT	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. -	11.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. -	8.	0	0	0	0	1	1	9	7	6	3	4	1	8	11	0	1	0	52
3. -	5.	6	1	1	2	7	28	6	9	10	12	8	11	25	26	18	2	0	172
1. -	3.	11	7	6	13	94	107	9	4	1	6	10	11	40	32	15	13	0	379
LT	1.	3	1	2	3	15	9	5	3	4	0	1	4	5	1	2	2	0	60
TOTAL		20	9	9	18	117	145	29	23	21	21	23	27	78	70	35	18	0	663
PERCENT		3.	1.	1.	3.	18.	22.	4.	3.	3.	3.	3.	4.	12.	11.	5.	3.	0.	100.

0 = NO OBSERVATIONS

II-247

(01/20/83-RPI)

FIVE MAXIMUM SLIDING AVERAGE
UG/M**3

C-B TRACT
SITE AB23
MAY 1982
CATHEDRAL BLUFFS SHALE

COMPONENT	AVG. TIME	RANK	DAY	HOUR(BEG)	VALUE
SO2	3 HR				
		1	6	13	7.0
		2	28	19	7.0
		3	25	15	6.1
		4	25	18	5.2
		5	20	10	3.5
SO2	24 HR				
		1	25	1	2.3
		2	19	20	1.3
		3	3	1	1.1
		4	5	15	1.1
		5	27	22	1.1
CO	1 HR				
		1	24	21	600.0
		2	24	20	300.0
		3	24	22	200.0
		4	24	23	200.0
		5	24	24	200.0
CO	8 HR				
		1	24	17	200.0
		2	2	1	100.0
		3	5	1	100.0
		4	6	21	100.0
		5	7	5	100.0
O3	1 HR				
		1	19	15	137.3
		2	19	16	135.4
		3	19	17	129.5
		4	19	14	121.6
		5	5	10	117.7
PART	24 HR				
		1	31	1	43.5
		2	27	1	31.3
		3	23	1	26.7
		4	19	1	25.6
		5	3	1	21.3

DATA ACQUISITION INSTRUMENT EFFICIENCY
CATHEDRAL BLUFFS SHALE OIL COMPANY
A.Q. TRAILER AB23

MAY 1982

GASEOUS PARAMETERS	
NOX:	88 %
NO:	88
NO2:	88
O3:	88
CO:	87
SO2:	88
H2S:	88

METEOROLOGICAL PARAMETERS	
WIND SPEED	
10 M:	88 %
30 M:	88
60 M:	88
WIND DIRECTION	
10 M:	88
30 M:	88
60 M:	88
SIGMA HORIZONTAL WIND DIRECTION	
10 M:	88
30 M:	88
60 M:	88
TEMPERATURE	
10 M:	88
30 M:	88
60 M:	88
DELTA TEMPERATURE:	88
RELATIVE HUMIDITY:	78
SOLAR RADIATION:	88
BAROMETRIC PRESSURE:	40
PRECIPITATION:	78
PARTICULATES:	100

October

June

July

August

September

October

November

July

August

September

October

November

December

August

September

October

November

December

September

October

November

December

OTHER STUDIES

FISH AND WILDLIFE MANAGEMENT PLAN

November

December

OTHER STUDIES

III OTHER STUDIES

Data were collected in six of the programs in the Other Studies categories during the period October 1978 through April 1979. These programs were the Revegetation Studies, Micro-environmental Studies, the Tract Photography Studies, the Archaeological Studies, the Industrial Health and Safety Studies, and the Traffic Load Studies. The other programs in the Other Studies categories were inactive during this time period.

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III A FISH & WILDLIFE MANAGEMENT PLAN

No additional studies were made during this time period.

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III B REVEGETATION STUDIES

Revegetation monitoring is conducted on sites which have undergone surface disturbance and on raw shale disposal sites. These sites, approximately 40 in number, are delineated in the Erosion-Control and Rehabilitation Plan. Monitoring techniques assess the progress of re-established vegetation through determination of cover and productivity of species groups and entire sites.

Revegetation activities in 1978 were outlined in Volume I of the 1978 C-b Annual Report. A summary of the status of reclamation of disturbed lands on Tract C-b as presented in that report follows.

RECLAMATION STATUS AND ACTIVITIES

The number of acres affected during the year 1978 is 162. The number of acres reclaimed for the year is 15. It consists of stockpiled soil at the Mine Support Area and abandoned access road. These reclaimed acres are to be straw-mulched in the Spring of 1979. Table III B-1 presents the activity schedule for 1979 and Figure III B-1 shows the locations of most of these activities.

The location and number of acres in the various stages of reclamation (back-filled, grades, topsoil replaced, revegetated) are as follows:

Number of acres -

- backfilled: In a continuing process, V/E Shaft Area (3 acres), and the initial berm into East No Name Gulch (1 acre) were backfilled.

- graded: All areas were graded (162 acres), except the water discharge and land application area (30 acres) south of the Mine Support Area. This area is under consideration by the Colorado Mined Land Reclamation Board.

- topsoil replaced: No topsoil was replaced. Top-soil was stored in two locations near the Mine Support Area, in two locations near the V/E Shaft Area, and on the abandoned access road (total 19 acres).

- revegetated: The two soil stockpiles near the Mine Support Area (5 acres), and access road including abandoned road (10 acres) were revegetated.

The species of vegetation planted, the locations, and approximate dates of planting are as follows:

1. Stockpiled soil area south of the Mine Support Area was seeded with permanent seed mixture (TableIII B-2) for south facing slopes (3 acres). Date of planting - October, 1978.

2. Stockpiled soil area west of the Mine Support Area was seeded with permanent seed mixture (TableIII B-2) for north facing slopes (2 acres). Date of planting - October, 1978.

3. Abandoned access road was seeded with the same mixture as that indicated above for north slopes. Date of planting - October, 1978.

4. Areas where continued activity permits only temporary mechanical rehabilitation include the Mine Support Area, V/E Shaft.

Table III B-1

RECLAMATION ACTIVITY SCHEDULE (UPDATE 1979)

AFFECTED AREAS	(1978=1) DISTURBANCE TIMETABLE	RECLAMATION PHASE-YEARS	ACREAGE
Existing Guard House	1	61	1
Traffic Control Station & Future Guard House Area	1	61	3
Access Road	1	61	22
Mine Support & V/E Shaft Area (Administration, stockpiled rock areas, batch plant, sedimentation impoundments, water treatment)	1	61	101
Stockpiled Rock - V/E Shaft Area	2	61	3
Stockpiled Soil - Support Area	1	1	5
Stockpiled Soil - V/E Shaft Area	1	2	1
East No Name Dam - Investigation	1	61	1
East No Name Dam - Potential Site	3	61	40
Explosives Area	1	61	1
Process Area	3	61	20
Temporary Soil Stockpile	2	61	3
Product Storage Area	3	61	9
Water Discharge & Land Application	2	61	40
Disposal Embankment			
Initial Berm into East No Name Gulch	1	4	1
Fill into East No Name	2	4	10
Berm across Cottonwood Gulch	3- 4	5- 6	42
	5- 6	6- 7	102
Advancing Face in Cottonwood & Sorghum and Starter Berms	7-10	8-11	146
	11-15	12-16	113
	16-29	17-30	339
Advancing Face across Sorghum Gulch	30-35	31-36	169
	36-40	37-41	271
	41-50	42-51	231
	51-60	52-62	212
		TOTAL----	1886 acres

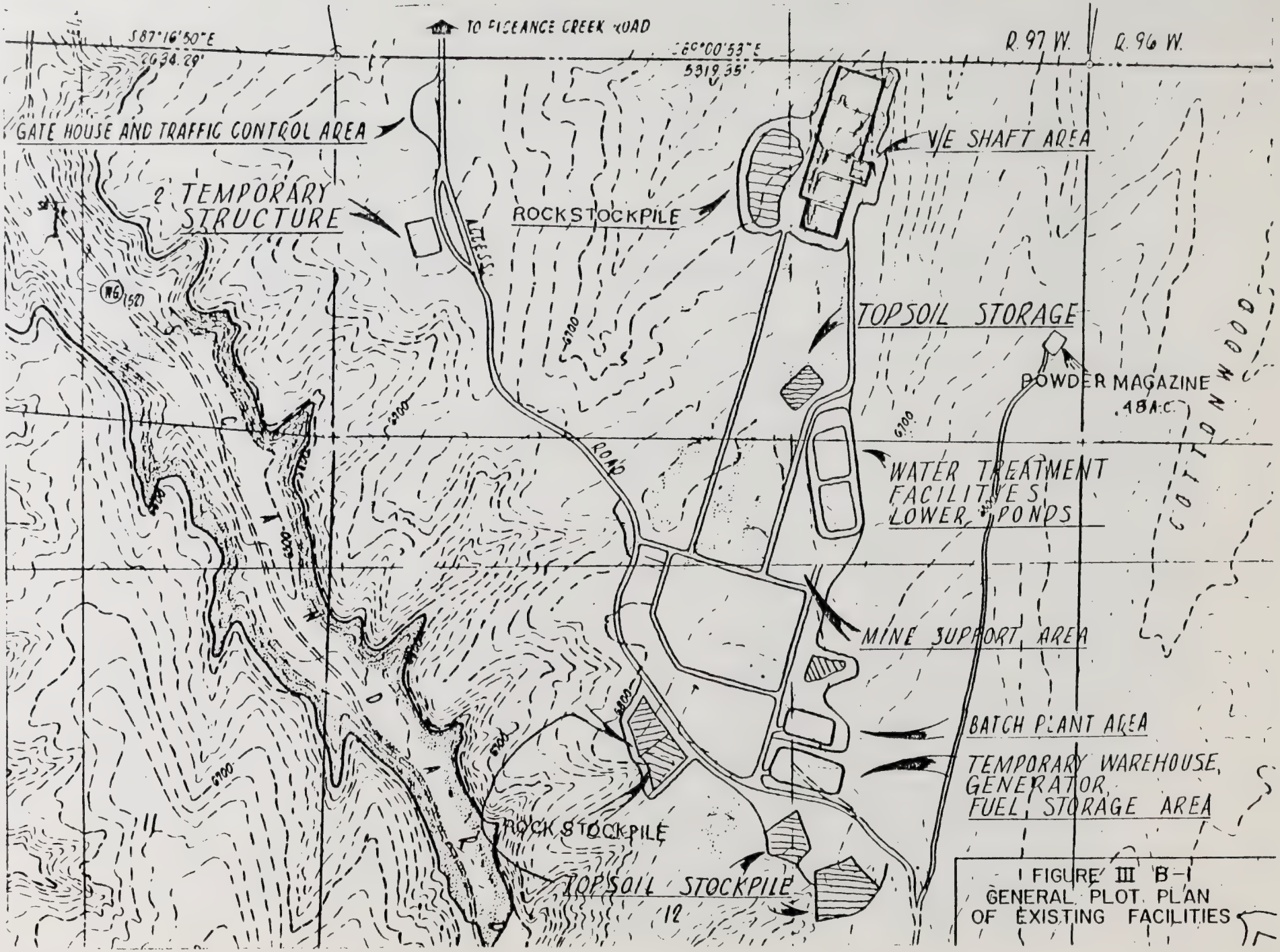

FIGURE III B-1
GENERAL PLOT PLAN
OF EXISTING FACILITIES

Table III B-2

SPECIES LIST FOR C-b RECLAMATION

	Species		Lbs/Acre Drilled North & East Facing Slopes and Level Areas	Lbs/Acre Drilled South & West Facing Slopes
Grasses:	* Agropyron cristatum	- crested wheatgrass	1	1
	* A. elongatum	- tall wheatgrass	-	1
	* A. spicatum var. inerme	- beardless bluebunch wheatgrass	2	2
	* A. smithii (rosana)	- western wheatgrass	1	2
	* A. intermedium (amur)	- intermediate wheatgrass	1	1
	* Bromus marginatus	- mountain brome	1	-
	* Elymus cinereus	- Great Basin wildrye	1	-
	* E. junceus	- Russian wildrye	1	1/2
	* Festuca ovina	- hard sheep fescue	1	-
	* Oryzopsis hymenoides	- Indian ricegrass	-	1
Forbs:	* Hedysarum boreale (Utah)	- Utah sweetvetch	1/2	1/2
	* Medicago sativa	- alfalfa	1	1/2
	* Penstemon sp.	- penstemon	1/2	1/2
Shrubs:	† Amelanchier spp.	- serviceberry	-	-
	†* Artemisia tridentata	- big sagebrush	1/2	-
	* Atriplex canescens	- four wing saltbrush	-	2
	* A. confertifolia	- shadscale	-	1
	†* Cercocarpus montanus	- mountain mahogany	1	1/2
	* Cowania mexicana	- stansberry cliffrose	1	1/2
	* Ceratoides lanata	- winterfat	-	1
	†* Purshia tridentata	- bitterbrush	1	1/2
	† Symphoricarpos oreophilus	- snowberry		
Trees:	† Juniperus osteosperma	- Utah juniper		
	† J. scopulorum	- Rocky Mountain juniper		
	† Pinus edulis	- pinyon pine		
		Total	13-1/2 Lbs/Acre	15-1/2

* Seed (P.L.S. - Pure Live Seed)

† Transplants (40 per acre) will be placed selectively; (North and East facing slopes and level areas), transplants will total 320 per acre.

Note - Forb seed will be innoculated with Northrup King innoculator

Area, the present and future guard area, East-No-Name-Dam investigation area, explosives area, temporary soil stockpile, water discharge area east of the Mine Support Area, and the initial disposal berm.

Mechanical reclamation, as used here, is defined as the application of temporary seed mixture (annual and perennial ryegrass, yellow seed clover) followed by sprayed application of coherrex dust palliative on rocky areas; the dust palliative is also sprayed on haul roads and parking lots. The Mine Support Area, the V/E Shaft Area, the guard house, and the explosives area were seeded May 1978 (106 acres). All other reclaimed acres will be seeded in April 1979.

Fertilizer is not scheduled for application to the topsoiled areas until Fall, following seeding. Therefore, 5 acres of the soil stockpiled near the Mine Support Area and 10 acres along the access road are not scheduled until the Fall of 1979. Dust palliative (11,225 gallons) was mixed at a dilution rate of approximately 7:1 and applied to mechanically stabilized areas.

No seedings have been established long enough to evaluate.

MICRO-ENVIRONMENTAL STUDIES

TRACT PHOTOGRAPHY

ACE APHY

AERIAL PHOTOGRAPHY

RCHAEOLOGICAL STUDIES

III-C MICRO-CLIMATE PROGRAM

Introduction

Micro-climatic parameters for October, 1978 - April 1979 include the following:

1. Maximum and minimum temperature at surface and at one meter.
2. Precipitation
3. Snow depth and moisture content

Scope

In addition to the extensive meteorology study in the Air Quality Section, micro-climatic stations are monitored. Studies on micro-climatic parameters on the C-b Tract provide data that are useful in assessing changes in vegetation production and structure, animal populations, or animal activity patterns, and may also be correlated with changes in functional components of the C-b ecosystem that may occur as a result of shale oil development. Five microclimatic stations are located in developmental sites and five in control sites.
The following sites are monitored:

Mc Station Locations *

No. 1 Chained Pinyon-juniper Rangeland, Veg. Plot 1
No. 2 Chained Pinyon-juniper Rangeland, Veg. Plot 2
No. 3 Plateau Sagebrush, Veg. Plot 3
No. 4 Valley Bottom Sagebrush, Veg. Plot 4
No. 5 Pinyon-juniper Woodland, Veg. Plot 5
No. 6 Pinyon-juniper Woodland, Veg. Plot 6
No. 7 Chained Pinyon-juniper Rangeland
(Animal Trapping Transect)
No. 8 Bunchgrass Community, South-facing Slope
No. 9 Valley Bottom Sagebrush, Mouth of Sorghum Gulch
No.13 Mixed Mountain Shrubland, North-facing Slope

All temperature readings consist only of maximum and minimum readings for two-week periods. Precipitation will be measured only during the growing season, March through October. Therefore, precipitation data from meteorology stations AB20 and AB23 are utlized for winter-month readings (November - February) for valley and pinyon-juniper microclimate stations. Snow measurements are obtained approximately from November - February.

Refer to Section IV for information on the four-digit computer station codes.

Results and Discussion

Detailed analysis of the data from the micro-climatic program will be presented in the annual analysis report. Summaries of the data are presented in this section.

MICROCLIMATE SUMMARY: AIR TEMPERATURE AND SURFACE TEMPERATURE MAXIMA AND MINIMA

October 1978 - April 1979

SITE NUMBER	PARAMETER	MONTH						
		OCT	NOV	DEC	JAN	FEB	MAR	APR
BC01	Air Temperature Maximum (°C)	22	37	5	1	7	10	22
	Air Temperature Minimum (°C)	-5	-24	-34	-26	-10	-22	-22
	Surface Temperature Maximum (°C)	28	23	13	2	6	11	24
	Surface Temperature Minimum (°C)	-8	-28	-22	-30	-18	-17	-16
BC02	Air Temperature Maximum (°C)	29	21	2	2	0	12	22
	Air Temperature Minimum (°C)	-9	-20	-31	-27	-9	-15	-17
	Surface Temperature Maximum (°C)	27	30	13	1	-1	12	39
	Surface Temperature Minimum (°C)	-10	-24	-23	-33	-15	-17	-16
BC03	Air Temperature Maximum (°C)	18	19	9	19	5	10	16
	Air Temperature Minimum (°C)	0	-24	-26	-23	-7	-13	-12
	Surface Temperature Maximum (°C)	28	30	19	-1	-1	8	17
	Surface Temperature Minimum (°C)	-9	-27	-21	-13	-8	-13	-14
BC04	Air Temperature Maximum (°C)	21	31	12	10	7	15	21
	Air Temperature Minimum (°C)	0	-26	-37	-35	-28	-20	-12
	Surface Temperature Maximum (°C)	30	33	10	6	22	21	22
	Surface Temperature Minimum (°C)	-10	-26	-19	-21	0	-18	-17
BC05	Air Temperature Maximum (°C)	22	20	8	4	8	10	20
	Air Temperature Minimum (°C)	-8	-20	-35	-33	-24	-19	-15
	Surface Temperature Maximum (°C)	18	23	10	4	8	10	22
	Surface Temperature Minimum (°C)	-4	-24	-23	-28	-20	-14	-15
BC06	Air Temperature Maximum (°C)	23	21	40	7	11	7	21
	Air Temperature Minimum (°C)	-4	-23	-37	-31	-23	-15	-14
	Surface Temperature Maximum (°C)	30	36	10	9	3	5	21
	Surface Temperature Minimum (°C)	-6	-22	-26	-33	-23	-13	-18
BC07	Air Temperature Maximum (°C)	22	33	7	4	2	11	22
	Air Temperature Minimum (°C)	-1	-24	-31	-32	-10	-22	-15
	Surface Temperature Maximum (°C)	28	22	10	5	10	10	21
	Surface Temperature Minimum (°C)	-8	-15	-24	-36	-23	-20	-16
BC08	Air Temperature Maximum (°C)	23	35	13	12	18	21	24
	Air Temperature Minimum (°C)	0	-16	-13	-33	-26	-15	-15
	Surface Temperature Maximum (°C)	38	42	19	10	16	21	22
	Surface Temperature Minimum (°C)	-4	-22	-31	-32	-5	-17	-14
BC09	Air Temperature Maximum (°C)	28	35	13	11	11	15	21
	Air Temperature Minimum (°C)	-8	-26	-38	-35	-28	-24	-20
	Surface Temperature Maximum (°C)	29	36	10	6	11	12	21
	Surface Temperature Minimum (°C)	-10	-25	-36	-36	-26	-19	-15
BC13	Air Temperature Maximum (°C)	24	35	9	8	14	10	10
	Air Temperature Minimum (°C)	-6	-26	-34	-32	-21	-14	-13
	Surface Temperature Maximum (°C)	28	36	10	7	11	11	10
	Surface Temperature Minimum (°C)	-6	-25	-24	-30	-21	-17	-9

Table III C-2

MICROCLIMATE SUMMARY: TOTAL PRECIPITATION AND AVERAGE SNOW DEPTH & SNOW MOISTURE

OCTOBER 1978 - APRIL 1979

SITE NUMBER	PARAMETER	MONTH						
		OCT	NOV	DEC	JAN	FEB	MAR	APR
BC01	Precipitation Total (Cm)	.48	4.27	(3)	(3)	(3)	(3)	.68
	Snow Depth Average (Cm)	.00	9.60	26.40	44.50	40.00	13.60	(2)
	Snow Moisture Average (Cm)	.00	2.10	4.00	6.30	9.40	(1)	(2)
BC02	Precipitation Total (Cm)	.43	13.41	(3)	(3)	(3)	(3)	.22
	Snow Depth Average (Cm)	.00	10.70	34.20	51.30	38.10	11.50	(2)
	Snow Moisture Average (Cm)	.00	1.20	6.70	8.10	9.30	(1)	(2)
BC03	Precipitation Total (Cm)	.23	5.23	(3)	(3)	(3)	(3)	.51
	Snow Depth Average (Cm)	.00	8.55	29.20	43.40	46.60	39.30	(2)
	Snow Moisture Average (Cm)	.00	.80	3.80	8.50	10.80	9.90	(2)
BC04	Precipitation Total (Cm)	.35	4.87	(3)	(3)	(3)	(3)	.49
	Snow Depth Average (Cm)	.00	10.90	32.75	44.20	34.70	2.70	(2)
	Snow Moisture Average (Cm)	.00	1.50	5.30	6.80	9.50	(1)	(2)
BC05	Precipitation Total (Cm)	.48	5.51	(3)	(3)	(3)	(3)	.31
	Snow Depth Average (Cm)	.00	8.20	22.65	35.80	28.80	8.80	(2)
	Snow Moisture Average (Cm)	.00	1.90	3.65	6.00	6.60	(1)	(2)
BC06	Precipitation Total (Cm)	.18	7.62	(3)	(3)	(3)	(3)	.48
	Snow Depth Average (Cm)	.00	15.10	34.85	48.10	46.20	(2)	(2)
	Snow Moisture Average (Cm)	.00	1.30	4.20	8.10	10.20	(2)	(2)
BC07	Precipitation Total (Cm)	.76	4.16	(3)	(3)	(3)	(3)	.50
	Snow Depth Average (Cm)	.00	6.55	29.90	40.10	33.90	7.00	(2)
	Snow Moisture Average (Cm)	.00	1.40	4.20	7.40	7.60	(1)	(2)
BC08	Precipitation Total (Cm)	1.63	4.62	(3)	(3)	(3)	(3)	.46
	Snow Depth Average (Cm)	.00	5.10	7.70	.00	.00	1.60	(2)
	Snow Moisture Average (Cm)	.00	.50	1.00	.00	.00	(1)	(2)
BC09	Precipitation Total (Cm)	.66	4.55	(3)	(3)	(3)	(3)	.52
	Snow Depth Average (Cm)	.00	8.05	25.50	38.30	27.50	5.10	(2)
	Snow Moisture Average (Cm)	.00	.80	4.60	5.50	6.40	(1)	(2)
BC13	Precipitation Total (Cm)	.45	2.67	(3)	(3)	(3)	(3)	3.07
	Snow Depth Average (Cm)	.00	18.00	42.65	59.00	58.70	48.30	(2)
	Snow Moisture Average (Cm)	.00	1.60	4.50	8.90	13.30	10.60	(2)

(1) Trace - Not Measurable.
(2) Snow Depth and Snow Moisture were not monitored in April 1979.
(3) Precipitation data not collected during the winter months.

TRACT PHOTOGRAPHY

ACE
APHY

AERIAL
PHOTOGRAPHY

RCHAEOLOGICAL
STUDIES

III D TRACT PHOTOGRAPHY

This section contains an explanation of work accomplished during the period of this report for:

1. Surface Program
2. Aerial Program

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III D-1 SURFACE PHOTOGRAPHY

A 360^{o} panorama was photographed at each of the photo points shown on Figure III D-1 during the summer of 1978.

A complete set of the 35 mm slides are numbered as to station, aspect and date. The set is stored in plastic envelopes and bound in a three ring binder and filed in a dust and light controlled container as part of the permanent record of the C-b Shale Oil Project.

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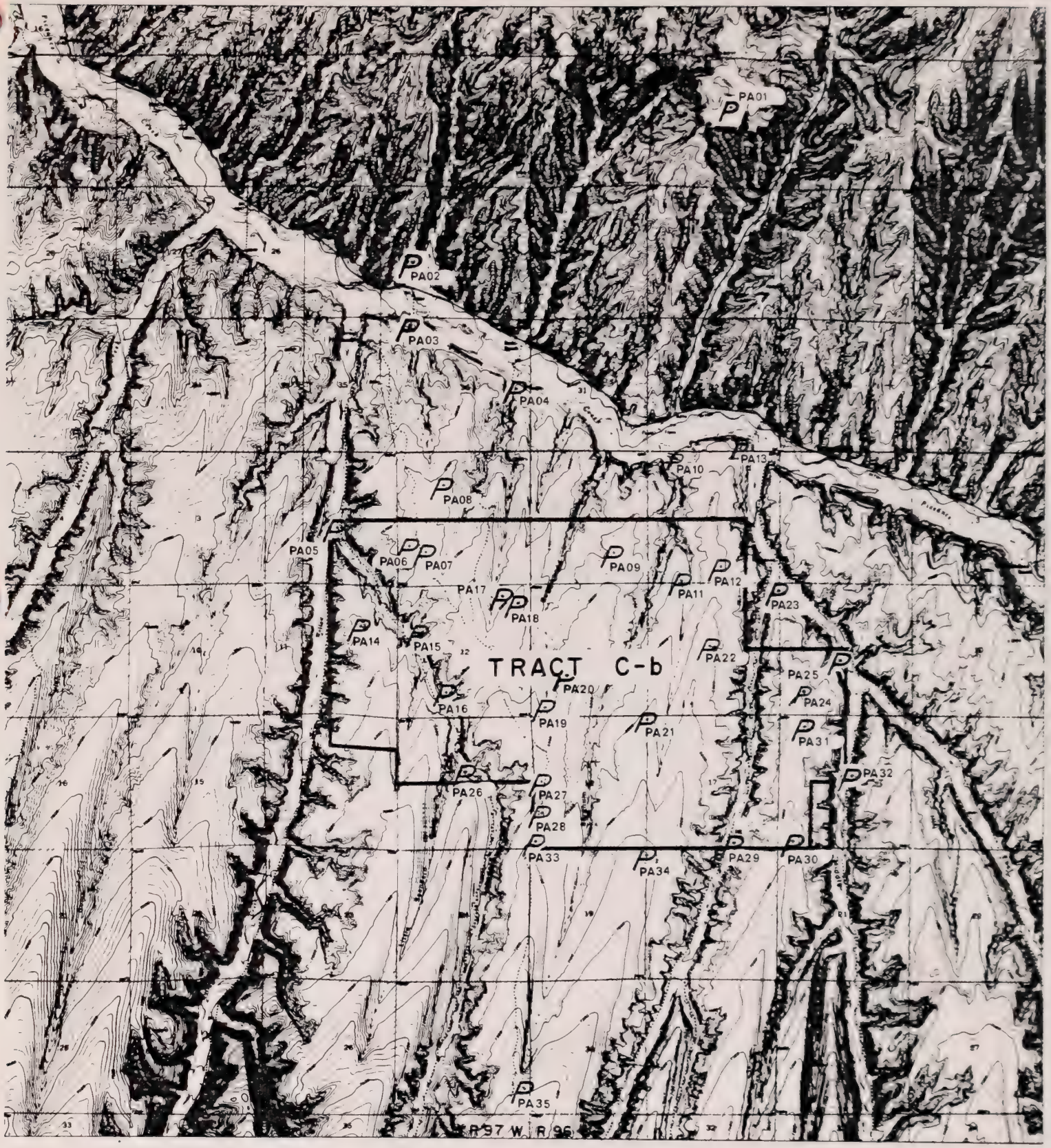
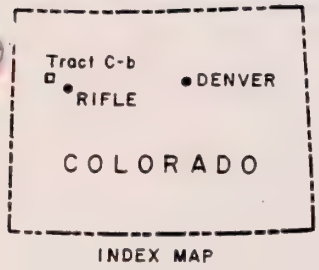


SURFACE PHOTOGRAPHY NETWORK



INDEX MAP

^{6}P = Photo Map Station

Figure III D-1

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AERIAL PHOTOGRAPHY

CHAEOLOGICAL STUDIES

III D-2 AERIAL PHOTOGRAPHY

Annual color infra-red photography is required by the Development Monitoring Program. By verbal agreement with the Area Oil Shale Office this program is temporarly suspended and an investigation into the use of LANDSAT imagery is being pursued. At the same time 7 ground truth sites have been selected and Ground Color IR photography is being taken at times coinciding with satelite overflights.

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III E ARCHAEOLOGICAL STUDIES

One additional study was completed during this time period. A report of that study and supporting data follow.

ARCHAEOLOGICAL RECONNAISSANCE OF THE MEEKER TO Cb TRACT 138 kv POWERLINE, RIO BLANCO COUNTY, COLORADO

Garry Luoma

Prepared under the supervision of

Calvin H. Jennings

Reports of the Laboratory of Public Archaeology, No. 26
January, 1979

Laboratory of Public Archaeology
Colorado State University
Fort Collins, Colorado 80523

Prepared for Occidental Oil Company and White River Electric Association

III E-2

BACKGROUND INFORMATION

The White River Electric Association of Meeker, Colorado, and the Occidental Oil Company of Grand Junction, Colorado, are involved in a joint effort for a planned 138 kv powerline which will extend from a White River Electric facility southwest of Meeker across primarily Bureau of Land Management (BLM) lands to the Occidental installation on the Cb tract in the Piceance basin. The project, because it involves primarily federal land, led to a request to the Laboratory of Public Archaeology (LOPA) for a cultural resource inventory of the planned right-of-way route of the powerline.

A LOPA field crew consisting of Garry Luoma, crew chief, Gregory Holmes, and Sharon Kyle, field assistants, began fieldwork on October 27, 1978, and terminated on October 31, 1978.

All work was performed under the direction of Dr. Calvin H. Jennings, Director, in order to comply with the Antiquities Act of 1906, the Historic Preservation Act of 1966, and Federal Executive Order 11593.

The powerline project BLM serial case file no. is C-26839; LOPA's Department of the Interior Antiquities Act Permit No. is 77-CO-046; and the in-house project no. is 78-19.

Mr. Joe Holeyfield, Manager, White River Electric Association, acted as the liaison for the project. Mr. Steve Stringer, Surveyor, Occidental Oil Company, showed the field crew the terminus location of the powerline on the Cb tract. Mr. Holeyfield offered considerable assistance to the field crew by providing relevant information, by

guiding the crew to portions of the powerline route, and by contacting the two private landowners for passage across their land. One area, in the vicinity of Piceance Creek flood plain, was not surveyed because of modern agricultural disturbance. The other portion, in the vicinity of Kendall Peak, is a part of a tract of Bankhead Jones L. U. lands listed on the BLM surface mineral plat map, Meeker NW 14, and is also locally recorded as privately owned by Mr. Phil Jenson of Meeker. The author was unable to find the exact status of this plot and as Mr. Jenson was notified of the survey, reconnaissance was completed in that portion. Table 1 lists the various landholdings crossed by the powerline.

The crew completed a BLM Class III (100%) survey of the project area. As day-to-day access roads were minimal on much of the area, the entire route was walked. Further, no access roads were surveyed, as pre-existing roads and helicopter transportation are to be used in construction. Occasional dense vegetation and steep slope localities hindered the quality of surface analysis otherwise performed on the survey.

Prior to actual fieldwork, a review of LOPA's archaeological site files yielded no information concerning cultural resources near the powerline route. The maps on file at the BLM office in Meeker also showed no archaeological sites recorded along the route of the powerline. However, several archaeological surveys of adjoining areas yielded sites (Arthur 1978; Jennings 1974, 1975; Jennings and Sullivan 1977; Price 1978; Ritchie and Taylor 1975).

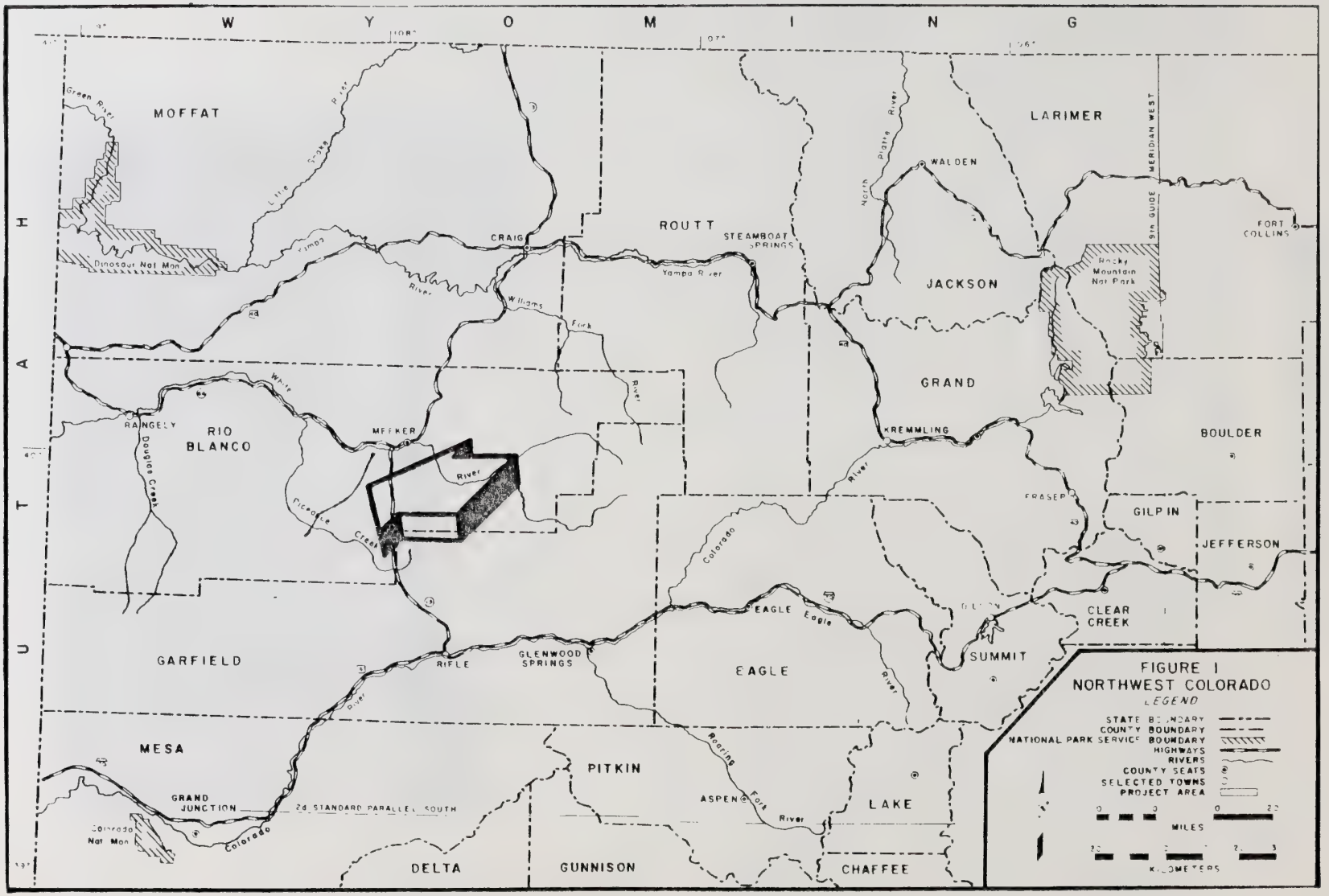
The survey resulted in the location and recording of one prehistoric site, 5RB766, and five isolated artifactual finds all within or along the route of the powerline.

THE POWERLINE MARKERS AND ROUTE

The beginning or northeast terminus of the powerline is located 5.7 air mi southwest of Meeker, Colorado, and is 17.28 mi in length (Fig. 1). The minimum affecting width is 200 ft; the placement of the stake markers is offcenter, allowing a 40 ft margin to the east and a 160 ft margin to the west. The extra space to the west allows for the position of a future parallel powerline.

The markers were positioned 1/4 to 3/4 mi apart (labeled P.O.T. or P.I. on appendixed map) and consisted of one upright numbered lathe, accessory stakes and three to four white plastic sheets spread out upon the ground, possibly used to facilitate aerial photo mapping (Fig. 2).

Figure 2. Marker P.I. 497+58.97 atop Kendall Peak. View is to the north.


W Y O M I N G
U T A H
MOFFAT
ROUTT
LARIMER
JACKSON
GRAND
BOULDER
GILPIN
JEFFERSON
CLEAR CREEK
SUMMIT
EAGLE
RIO BLANCO
GARFIELD
MESA
PITKIN
LAKE
CHAFFEE
GUNNISON
DELTA
CRAIG
STEAMBOAT SPRINGS
WALDEN
FORT COLLINS
RANGELY
MEEKER
KREMMLING
FRASER
RIFLE
GLENWOOD SPRINGS
ASPEN
GRAND JUNCTION
Dinosaur Nat Mon
Rocky Mountain Nat Park
Colorado Nat Mon
Green River
Little Snake River
Yampa River
White River
Williams Fork River
North Platte River
Douglas Creek
Piceance Creek
Colorado River
Eagle River
Roaring Fork River
6th PRINCIPAL MERIDIAN WEST
40th
37th
109th
107th
105th
2d STANDARD PARALLEL SOUTH
FIGURE 1
NORTHWEST COLORADO
LEGEND
STATE BOUNDARY
COUNTY BOUNDARY
NATIONAL PARK SERVICE BOUNDARY
HIGHWAYS
RIVERS
COUNTY SEATS
SELECTED TOWNS
PROJECT AREA
MILES
KILOMETERS

Nearby, hindering tall brush and trees were chopped down, occasionally showing a crude trail through the vegetation to the next stake. Very little accessory plastic flagging was used to mark the route between stakes. It was the author's opinion that the markers were accurately mapped but addition of in-between stakes and plastic flagging would have been more helpful in determining the right-of-way route.

Table 1 lists the legal description of land area crossed by the route of the powerline.

TABLE 1

Public Lands

Sec. 2, 10, 11, 15, 22, 28, 32, 33, T1s, R95w

Sec. 5, 6, 7, T2s, R95w

Sec. 12, 13, 14, 15, 20, 21, 22, 29, 31, T2s, R96w

Sec. 6, T3s, R96w

Bankhead Jones L. U. Lands

Kendall Peak NE¼NW¼SE¼, Sec. 15, T1s, R95w

SW¼SW¼, Sec. 11

SE¼SE¼, Sec. 10

Privately Owned

Piceance Creek Flood Plain NE¼SW¼, Sec. 31, T2s, R96w (not surveyed)

The powerline begins near the USGS baseline T1n-T1s (boundary) at the NW¼NW¼NE¼NE¼, Sec. 2, T1s, R95w, above the confluence of Puckett Gulch and the White River. It continues south 291°, 2.37 mi up an unnamed narrow

drainage for 3/4 mi. Here the route trends up the ridge slope, then atop a narrow ridge, continuing south up to Kendall Peak. The route abruptly turns 336°, continuing to the next marker less than 1/8 mi away, then 288° to next P.I., slightly over 1/4 mi. The route then follows 297° for 2.37 mi across and past the south end of the Kendall Peak connected ridgetop, above and across Hay Gulch, over a narrow interfluvial ridge between Hay and Segar Gulches, and then across Segar Gulch to a point atop Segar Mountain. From here the route trends 311°, 4.07 mi across one elongated ridgetop connected to Segar Mountain to the north rimtop above the Dry Fork of the Piceance Creek, across the Dry Fork and above on the end portion of the ridgetop between Post Gulch and Corral Gulch, side drainages of the Dry Fork. This trend ends slightly above the drainage head of Post Gulch. The route continues 341.5° for 2.0 mi across a broad open ridgetop to the easternmost ridgetop above Collins Gulch. It then zigzags roughly 340° across the gulch about 2.0 mi to a high portion of prominent upland, the western rim of Collins Gulch. The route continues southwest down an interfluvial ridgetop between Collins Gulch and Gardenmeir Gulch 3.31 mi, across the Piceance Creek flood plain and up the east bank of a short unnamed gulch to the west of Cottonwood Gulch in the Cb tract at NW¼NE¼NW¼SW¼, Sec. 6, T3s, R96w (Fig. 3).

Figure 3. North rim of the Piceance Creek on the powerline route. Jessup Gulch Quad, in the vicinity of P.O.T. 1228+64.52. View is to the south looking across the creek to the C-b tract.

ENVIRONMENT

Several authors to date have given apt description of the basin (Cringan 1973; Ferchau 1973; Jennings 1974, 1975; Landou 1973; Marlett 1973; Weber and others 1977).

A generalized view of the area surrounding the powerline route is a series of narrow, low, rounded and open interfluvial ridgetops isolated by essentially parallel trending drainages, the location of which is affected by the severe folding of the bedrock (Landou 1973:II-3,-11,-14).

Elevation of the survey area varied from 6300 ft on the Piceance Creek bottom to 8000 ft at Kendall Peak. The average elevation ranged

at 7300 ft. Occasionally, at the drainage bottoms, vertical relief was as much as 700 ft in 1/2 mi.

The presentday climate is dry, averaging 17.27 in of rainfall, possibly half from snowfall (Marlett 1973:II-56). The powerline route is drained by the White River to the north, near the beginning of the powerline, and the Piceance Creek and its tributaries, Hay Gulch, Segar Gulch, the Dry Fork of the Piceance and Collins Gulch. These latter drainages are all ephemeral streams. The only surface water present in the vicinity is the Piceance Creek and the White River. Cringan (1973:VII-1) lists over 80 species of mammals in his study of the Piceance fauna. Mule deer is the most obvious and dominant mammal in the basin. Other more common animals observed are cottontail rabbits, white-tailed jackrabbits, chipmunks, ravens, magpies, and red-tailed hawks.

Vegetation along the powerline route includes an occasional thick growth of pinyon, and species of juniper, which predominate on the rocky ridgetops. Douglas fir was noted near the rim of both Piceance Creek and the Dry Fork of the Piceance. Mixed shrub communities of primarily mountain mahogany, Gambel's oak and sage created parklands on the broad uplands crossed by the powerline route. The concentration of various shrub communities often depended on direction of slope and upper drainage orientation. In particular the concentration of Gambel's oak and mountain mahogany often created near impenetrable barriers, particularly on north-facing slopes.

SURFACE EXPOSURE

Surface exposure varied from poor to excellent, the latter being best represented by the park uplands of larger broad ridgetops. The poorest exposure was in upper drainage swales, heavy with thickets of shrubbery. However, these latter areas were not considerable on the survey route.

ROAD ACCESS

Established roads and trails in the survey area are almost nonexistent in the upper seven mile section of the powerline route between the Dry Fork of Piceance Creek north to Kendall Peak. Energy development north of Piceance Creek has created well service roads which occasionally intersect and parallel the lower seven miles powerline route (Fig. 4).

Figure 4. In the vicinity of P.O.T. 833+45.03, Segar Mountain Quad, NW¼ Sec. 7, T2s, R95w. View is to the northwest.

SURVEY METHODOLOGY

The purpose of this survey was to locate and record any cultural remains upon or near the margins of the powerline route for the purpose of preventing destruction of these remains and to evaluate such remains in terms of National Register of Historic Places (NRHP) criteria.

The survey crew split into two groups. One or two persons began foot reconnaissance at a location along the powerline route while the third drove and parked the vehicle ahead of the others in a leap frog pattern. Use of the few access roads to the powerline route resulted in broad vehicular detours and occasional long sections of powerline route surveyed in a day.

Silva compasses were used to take field bearings from the field map in orienting the survey route. Both one and two person groups walked the right-of-way route in singular or parallel zigzag fashion past the minimal margin of the powerline route (200 ft). The ground surface was intensely viewed for potential exposed cultural debris. An occasional thick growth of oak brush and mountain mahogany prohibited practical survey progress and such areas were walked through and not intensely surveyed. These areas were considered negative in the sense of both forming a barrier and production of a heavy leaf matter, thereby reducing surface visibility. The accompanying map delineates the sections of the right-of-way route that were not surveyed because of thick vegetation and or steep slope.

The location of two or more objects of cultural material or artifacts within a 20 m area is the applied definition of a prehistoric site. One artifact alone is designated an isolated find (IF). Upon location of any

artifact, a further detailed surface analysis of the surrounding locale was conducted to determine whether or not the artifact was a portion of a site or simply an isolated find.

RESULTS

No historic sites, or remains were located. However, one prehistoric site, 5RB766, a small lithic scatter, and five isolated finds consisting of two hammerstones, a basalt core and two biface fragments were located on or near the powerline right-of-way.

5RB766

Location:	T1s, R95w, at the junction of four connecting sections: 10, 11, 14, 15. Over half of the site is located on the Bankhead Jones L.U. land tract in Secs. 10, 11, 15.
Description:	Slight scatter of different kinds of cherts and quartzite flakes upon a narrow ridgetop, thickly covered with mountain mahogany and oak brush (Figs. 5, 6). Site appears to be exposed by wind deflation at small surface areas between vegetation clumps. No diagnostic tools or constructed features. Present site extent less than 360 m^2.
Significance:	Site presently lacks potential for nomination to the NRHP, but may contain significant scientific information due to the location of the site at this locality.
Recommendation:	The BLM Evaluation Code S0 is suggested for 5RB766.

Figure 5. 5RB766. Site lies to the left of the vehicle, and second small roadcut. Note dense brush. View is to the north.

Figure 6. 5RB766. Site datum stake and Brunton tripod. Note surface exposure and vegetation. View is to the northwest.

BLM site evaluation codes are as follows:

S1 Site is eligible to or already on the NRHP
S2 Site is likely to be eligible to the NRHP
S3 Site is not likely to be eligible to the NRHP
S4 Site no longer exists
S0 Insufficient data is available to place the site in one of the above levels

As the position of the powerline poles and the amount of construction surface damage is to date undefined with relationship to the site, rerouting the powerline alignment is recommended.

Isolated Finds IF273-277RB

The location of the four isolated finds 274-277RB in relation to Piceance Creek suggest the slim possibility of more cultural material buried in association with the Piceance Creek and its near uplands (see enclosed map). IF273 has an uncertain provenience, as it exhibits recent abrasions and lies in the bulldozer cut along the road in Collins Gulch. No further action concerning these IF's need be taken.

DISCUSSION

The archaeology of the Piceance Basin has been wholly limited to a few test excavations and ground surveys. Potentially impacted archaeological sites have been mitigated primarily by avoidance of the site area. LOPA also recommends avoidance of 5RB766. This could be accomplished by orienting the powerline directly from P.O.T. 478+80.44 to P.I. 502+89, thus eliminating one P.I. (P.I. 497+58.97).

If reorientation of the powerline is not pragmatic, further investigation of 5RB766 should be conducted. These investigations should include a proton magnetometer survey to detect any buried and burned features, such as firepits, a controlled surface grid collection and limited test excavation. In addition, computer time would be necessary to interpret data from the magnetometer survey.

The contractor should be warned that due to the fact that buried sites will not have been detected by this surface reconnaissance, any discoveries are to be reported immediately to the BLM District Archaeologist. All land disturbing work in the vicinity of the find is to be halted until the find has been evaluated by a trained archaeologist. Violation of federal antiquities laws can result in severe penalties.

If there are any questions concerning the survey or this report, please feel free to contact the Laboratory of Public Archaeology, Colorado State University, Fort Collins, Colorado 80523.

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APPENDIX TO

ARCHAEOLOGICAL RECONNAISSANCE OF THE MEEKER TO Cb TRACT 138 kv POWERLINE, RIO BLANCO COUNTY, COLORADO

Garry Luoma

Prepared under the supervision of

Calvin H. Jennings

Reports of the Laboratory of Public Archaeology, No. 26
January, 1979

Laboratory of Public Archaeology
Colorado State University
Fort Collins, Colorado 80523

SUPPLEMENTAL INFORMATION

At the request of the BLM White River District Office, two fossil plant localities were observed and then recorded on the field map. Both localities were sparse outcroppings, and appeared to be some kind of reed (see map).

The Legal Description:

Segar Mountain Quadrangle

$SW\frac{1}{4}SW\frac{1}{4}SW\frac{1}{4}$, Sec. 2, T2s, R91w

$SW\frac{1}{4}NW\frac{1}{4}NE\frac{1}{4}NW\frac{1}{4}$, Sec. 5, T2s, R95w

The following errors in stake numbering were noted:

(1) P.O.T. 1158+33.86 on map, labeled P.O.T. 1228+64.52 at marker stake

(2) Some confusion as to the position of P.O.T. 1149+43.95

Both on Jessup Gulch quadrangle $NW\frac{1}{4}$, Sec. 29, T2s, R96w.


FOSSIL PLANT LOCATIONS
P.O.T. 608+36.11
P.O.T. 645+22.12
P.I. 670+88.71
P.O.T. 695+22.83
P.O.T. 729+70.80
P.O.T. 775+92.02
T 1S R 95W
T 2S R 95W
SEGAR MTN. QUAD
Segar Gulch
Timber Gulch
Hay
28
29
27
32
33
34
6
4
3

COLORADO BLM ARCHAEOLOGICAL SURVEY SITE INVENTORY RECORD

This information to be filled in by site recorder:

1) site No.5RB7662) project name Meeker to Cb tract 138 Kv Powerline 3) BLM district Craig

4) resource area White River Resource Area 5) planning unit Piceance Basin 01-08

6) surface management quad Meeker NW 14

7) heritage value (does the site have special significance for ethnic groups in the area?) yes ___ no _X_

This information to be filled in by district archaeologist:

8) case file or contract No. _____

9) surface owner: BLM ___ other Federal ___ State ___ private ___

0) subsurface ownership (does BLM have responsibility) yes ___ no ___

1) grazing unit _____ 12) HMP unit _____

3) segregation (type) _____

4) mining claim recordation: yes ___ no ___ 15) mineral agency _____

6) mineral owner _____ 17) mineral part owner _____

8) mineral lease 1 _____ 19) mineral lease 2 _____

20) future potential S1 ___ S2 ___ S3 ___ S4 ___

21) conflicts:

wildlife ____

watershed ____

minerals ____

range ____

recreation ____

forestry ____

lands ____

22) mitigation: avoid ___ map ___ collect ___ test ___ partially excavate ___ excavate ___

23) District Archaeologist's signature _____

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

(1) Temp. Site No. _____ (2) Cat. No. IF - 273 - RB

(3) Cat. Name Core (4) Project/Source 78-19

(5) Analytical Name Core By G. Luoma

(6) Field Specimen No. IF273RB Date 10/29/78

(7) Cat. By G. Luoma Date 11/7/78

(8) Owner BLM Meeker Colorado
Name Address City State Zip

(9) No. of Pieces 1 (10) Pres. Storage LOPA

(11) Provenience: Horizontal SENWNENW Sec. 21 T2S R96W Vertical surface

(12) Stratigraphic Association(s): _____

(13) Condition complete (14) Preservatives none

(15) Photo Cat. No. _____ (16) Pub. Illust. No. _____

(17) Pub. Reference _____

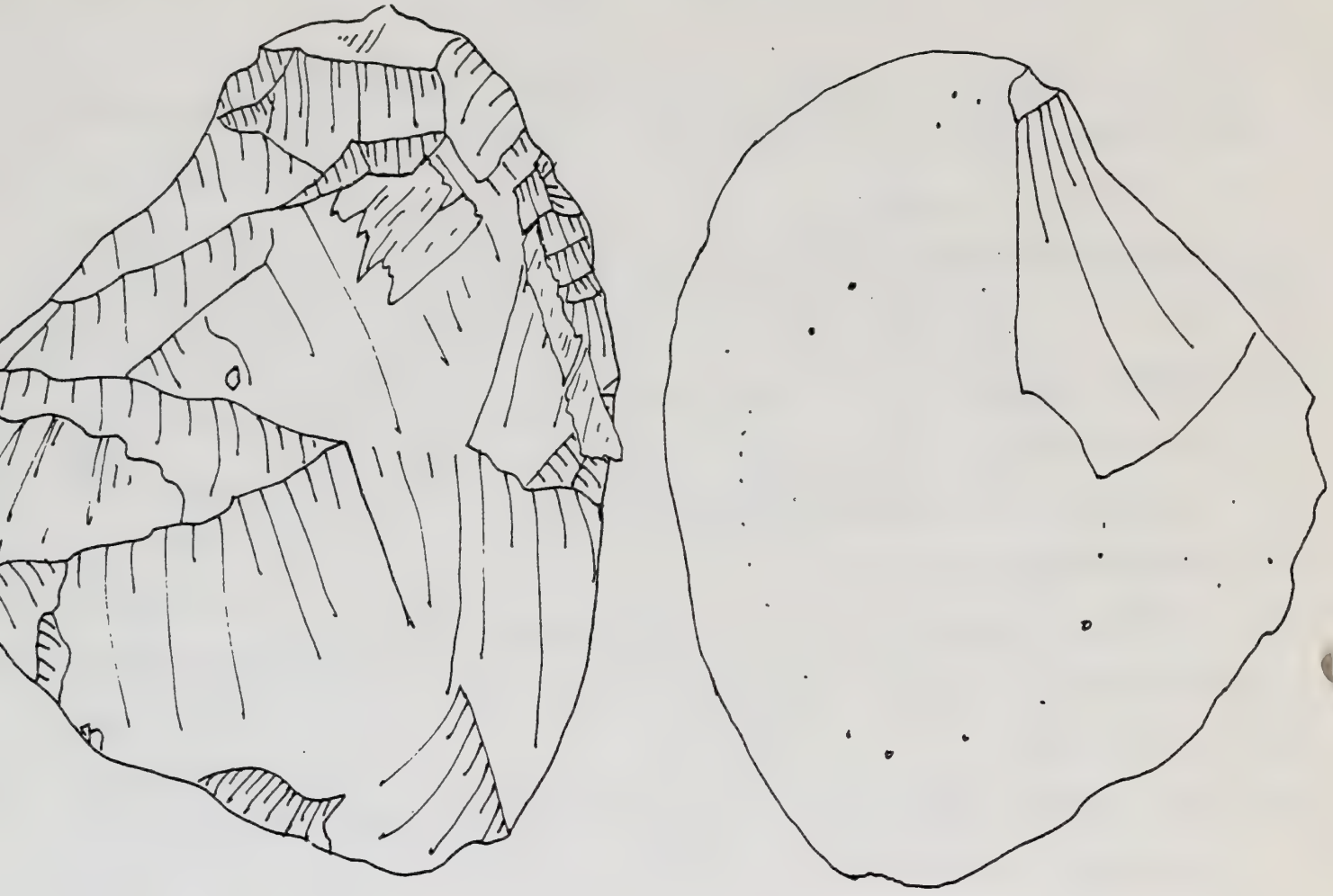
(18) Misc. Remarks Found in bulldozer cut along highway; uncertain provenience
Exhibits recent abrasion possibly by the bulldozer blade.

(19) Description: L = 11.5 cms. W = 8.86 cms.
T/H = 3.86 cms. Max. Diam. = _____ cms.
Min. Diam. = _____ cms.
Material(s) basalt
Technique(s) of manufacture split cobble, face roughly flaked

(20) Sketch (see reverse)

(20) Sketch:

Cat. # 1F273 RB Scale: 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

(1) Temp. Site No. _____ (2) Cat. No. IF 274 RB

(3) Cat. Name Biface (4) Project/Source 78-19

(5) Analytical Name Biface By G. Luoma

(6) Field Specimen No. IF274RB Date 10/30/78

(7) Cat. By G. Luoma Date 11/6/78

(8) Owner BLM/ Occidental Oil Co. Meeker Colorado
Name Address City State Zip

(9) No. of Pieces 1 (10) Pres. Storage LOPA

(11) Provenience: Horizontal NESWNENW Sec. 6 T3S R96W Vertical surface

(12) Stratigraphic Association(s): _____

(13) Condition incomplete, broken (14) Preservatives none

(15) Photo Cat. No. _____ (16) Pub. Illust. No. _____

(17) Pub. Reference _____

(18) Misc. Remarks Broken in two places, heavy wear on one edge

(19) Description: L = 2.74 cms. W = 2.48 cms.

T/H = .53 cms. Max. Diam. = _____ cms.

Min. Diam. = _____ cms.

Material(s) chalcedony

Technique(s) of manufacture rough parallel flaking on both faces

(20) Sketch (see reverse)

(20) Sketch:

Cat. # IF-274-PP Scale: 1 to 1

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

(1) Temp. Site No. _____ (2) Cat. No. IF -275 - RB

(3) Cat. Name Hammerstone (4) Project/Source 78-19

(5) Analytical Name Hammerstone By G. Luoma

(6) Field Specimen No. IF275RB Date 10/30/78

(7) Cat. By G. Luoma Date 11/7/78

(8) Owner BLM/ Occidental Oil Co. Meeker Colorado
Name Address City State Zip

(9) No. of Pieces 1 (10) Pres. Storage LOPA

(11) Provenience: Horizontal SWNESESW Sec. 31, T2S R96W Vertical surface

(12) Stratigraphic Association(s): _____

(13) Condition complete (14) Preservatives none

(15) Photo Cat. No. _____ (16) Pub. Illust. No. _____

(17) Pub. Reference _____

(18) Misc. Remarks Exhibits rough flaking and heavy battering on one distal edge

(19) Description: L = 6.94 cms. W = 6.12 cms.

T/H = 3.50 cms. Max. Diam. = _____ cms.

Min. Diam. = _____ cms.

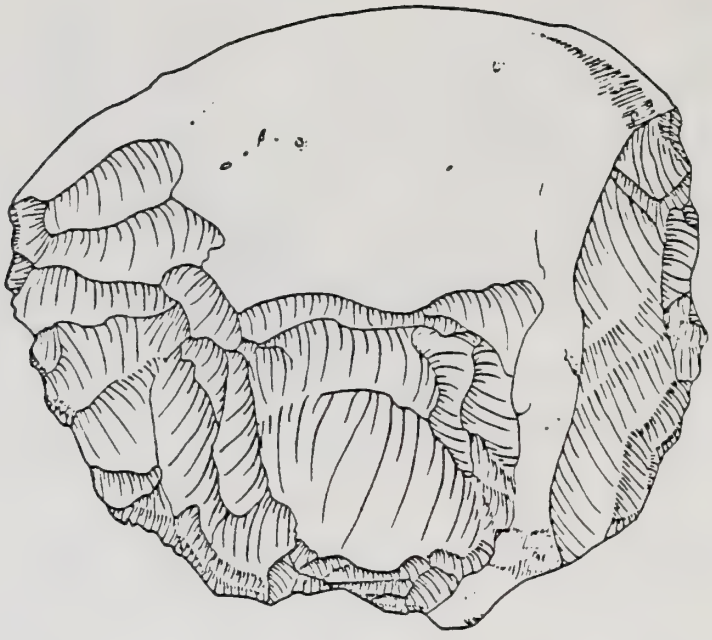
Material(s) quartzite

Technique(s) of manufacture _____

(20) Sketch (see reverse)

(20) Sketch:

Cat. # IF-275-BB Scale: 1 to 1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

(1) Temp. Site No. _____ (2) Cat. No. IF - 276 - RB .

(3) Cat. Name Hammerstone (4) Project/Source 78-19

(5) Analytical Name Hammerstone By G. Luoma

(6) Field Specimen No. IF276RB Date 10/30/78

(7) Cat. By G. Luoma Date 11/7/78

(8) Owner BLM/ Occidental Oil Co. Meeker Colorado
Name Address City State Zip

(9) No. of Pieces 1 (10) Pres. Storage LOPA

(11) Provenience: Horizontal SENESESW Sec. 31 T2S R96W Vertical surface

(12) Stratigraphic Association(s): _____

(13) Condition complete (14) Preservatives none

(15) Photo Cat. No. _____ (16) Pub. Illust. No. _____

(17) Pub. Reference _____

(18) Misc. Remarks Exhibits battering along the periphery of one proximal edge.

(19) Description: L = 7.20 cms. W = 6.62 cms.

T/H = 4.60 cms. Max. Diam. = _____ cms.

Min. Diam. = _____ cms.

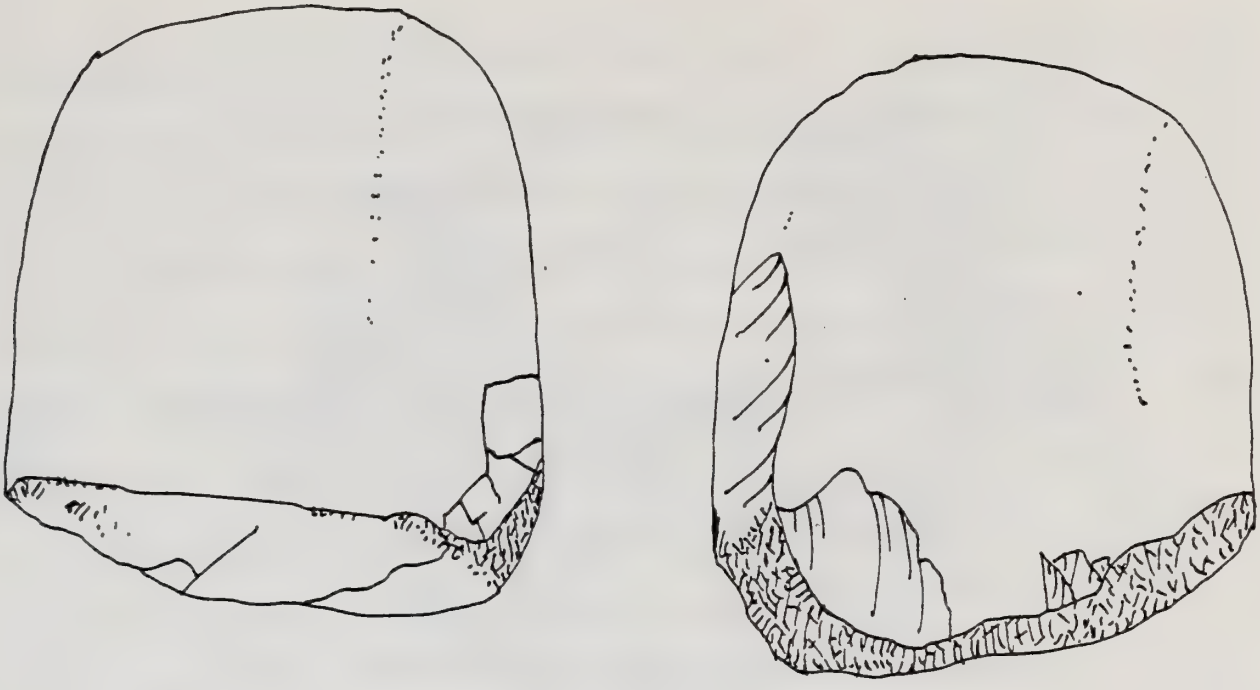
Material(s) quartzite

Technique(s) of manufacture _____

(20) Sketch (see reverse)

(20) Sketch:

Cat. # 1E 276 RB Scale: 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

(1) Temp. Site No. _____ (2) Cat. No. IF - 277 - RB

(3) Cat. Name Biface (4) Project/Source 78-19

(5) Analytical Name Biface By G. Luoma

(6) Field Specimen No. IF277RB Date 10/30/78

(7) Cat. By G. Luoma Date 11/6/78

(8) Owner BLM Meeker Colorado
Name Address City State Zip

(9) No. of Pieces 1 (10) Pres. Storage IOPA

(11) Provenience: Horizontal SWSENWNE Sec. 31, T2S R96W Vertical surface

(12) Stratigraphic Association(s): _____

(13) Condition Incomplete, broken (14) Preservatives _____

(15) Photo Cat. No. _____ (16) Pub. Illust. No. _____

(17) Pub. Reference _____

(18) Misc. Remarks Exceptional black in color, broken in at least 3 places.

(19) Description: L = 4.38 cms. W = 3.80 cms.

T/H = .75 cms. Max. Diam. = _____ cms.

Min. Diam. = _____ cms.

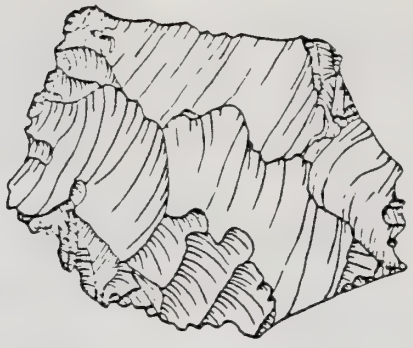
Material(s) chert

Technique(s) of manufacture Soft hammer percussion flaking.

(20) Sketch (see reverse)

(20) Sketch:

Cat. # IF-277-FB Scale: 1 to 1



TRANSECT & TRAVERSE/EXCAVATION UNIT DATA SITE NO. 5RB766

Temp. Site No: Project/Source: 78-19 Cataloged by: G. Luoma Date: 11/7/78 Page of

No.	☒ Transect ☐ Traverse ☐ Excavation Unit	☒ Bearing/Distance ☐ Depth below datum	Field Spec. No.	Material/ No. of Pieces	Remarks	Associated Artifacts and/or Features	Catalog No.
1	Leg 1	N68W/32.0m from datum	1	3 chert	first flake at 4.6m; last flake at 5.3m edge of ridge at 32.0m		.?
2	Leg 2	S69E/20.8m from datum	NO COLLECTION			pipeline 20.8 to 26.2m road 7.5 to 11.8m	---
3	3	N3E/33.5m from datum	2	1 chert	flake at 17.1m		.1
4	Leg 4	S33W/24m from datum	NO COLLECTION				---
						N3E/13.6m to geodesic survey four corner section marker	
						10.5m South to uncollected flake from datum	

III E-33

COLORADO ARCHAEOLOGICAL SURVEY

Office of the State Archaeologist
1300 Broadway, Denver, CO 80203

SITE INVENTORY RECORD

1) Site No. 5RB766 (2) Temp. No. _____ (3) Site Name _____

4) County Rio Blanco (5) Project Name Cb tract to Meeker Powerline Survey 78-19

I. LOCATION: (6) Township 1s ; Range 95w ; NE ¼ of NE ¼ of NE ¼ of NE ¼ section 15 ; P.M. 6th (7) UTM 1 2 ; 7 5 2 9 9 0 mE; 4 4 2 9 1 0 0 mN

8) USGS Quad: name Segar Mtn. quad. ; 7.5 X , 15 ; date 1952

9) Other Maps _____ (10) Elev. 7759 ft. [x.3048=] _____ m

11) Location/Access Site lies on an extended, very narrow ridge isolated by three, blue line feature, unnamed short canyons draining north-northeast from Kendall Peak (VABM) name.

_____. Attach Photocopy of Portion of USGS Quad. Clearly show site.

II. ARCHAEOLOGICAL DATA: (12) Site Type Open Lithic

13) Site Description/Features Slight lithic scatter exposed according to vegetation (Mountain mahogany) distribution and extent of wind deflation. No features. Site is thickly covered with mountain mahogany and some Gambel's oak. The ridge area to east disturbed by road, though no flake debitage appears there. (cont'd)

14) Artifacts Slight lithic scatter

15) Surface Collection: yes X no ; % collected ; sampling technique: none grab random transect X other , describe 4.0m transect

16) Artifact Storage at Laboratory of Public Archaeology, Colorado State University

17) Dating Method(s) _____ ; Sample Nos. _____

18) Dating Results _____

19) Cultural Affiliation/Components/Time Periods _____

20) Site Dimensions 13.0m X 27.0m ; est measured X ; based on _____

21) Site Depth near surface ; cut/bank auger shovel other _____

22) Approx. Area of Site (m^2, m^3, hectare _____

III. ENVIRONMENTAL DATA: (23) Site Soil: color (Munsell) brown-pale brown 10yr 5.5/3 depth shallow to 15 cm; character clay soil with small angular pieces of reddish buff sandstone, also slight surface layer of finer particle soil.

24) Topography/Landform narrow north-sloping ridgetop

25) Slope: site level; surrounding 30^{o}-40^{o}

26) Water Source: name/nature White River; elev. 6000 Ft.

distance/direction to North 4 miles; other sources Canyons east, west or north

27) Vegetation on site Pinyon, mountain mahogany, short grasses at base of mountain mahogany, Gambel's Oak.

28) Surrounding Plant Communities same with sage and seeded grass, crested wheat grass

29) Comments on Apparent Site Microenvironment chipping station; ridgetop camp

IV. MANAGEMENT DATA: (30) Register: on ___ nominated ___ elig ___ need data X no ___

comments

31) Natural Deterioration: Degree: none ___ light X moderate ___ heavy ___ complete ___;

Type: water erosion: sheet ___ gully ___; wind erosion X; animal disturbance ___; other

32) Human Disturbance: Degree: none ___ light ___ moderate X heavy ___ complete ___;

Describe Type: vandalism

construction Road cuts (two); recreation

other Future powerline above site

33) Supervision: none ___ marked ___ fenced X patrolled ___ access controlled ___ other

Locked fence gate

34) Completed: record X collect X map X test ___ part. excav. ___ total excav. ___

stabilized ___ other

35) Management Recommendations: avoid ___ map ___ collect ___ test X part. excav. ___

total excav. ___ no further work ___ other

comments Site may have larger extent with natural deterioration

36) Known Collections/Excavations/Publications

37) Land Owner Phil Jenson, Meeker, CO

8) Tenant(s)_____ (39) Informants_____

40) Photos_____

on file at_____

41) Total Man/Hours spent in the research for and prep. of this form 1

42) Number of Fieldworkers involved in recording/preparation_____

43) "Out-of-Pocket" Expenses (document if possible)_____

44) State/Federal Permit Nos._____

45) Report Title_____

46) Site Recorder Garry M. Luoma ; signature_____

47) Affiliation of Recorder Research Associate, Laboratory of Public Archaeology, CSU

48) Date(s) of Recording 10/29/78 (49) Approved by (P.I.)_____

V. ADDITIONAL INFORMATION:

13) Apparently the western portion of ridge area where site lies was preferred or not preserved thus site has a west-southwest aspect.

26) On this survey, the canyon drainage to the north 1½ miles had a little seepage.

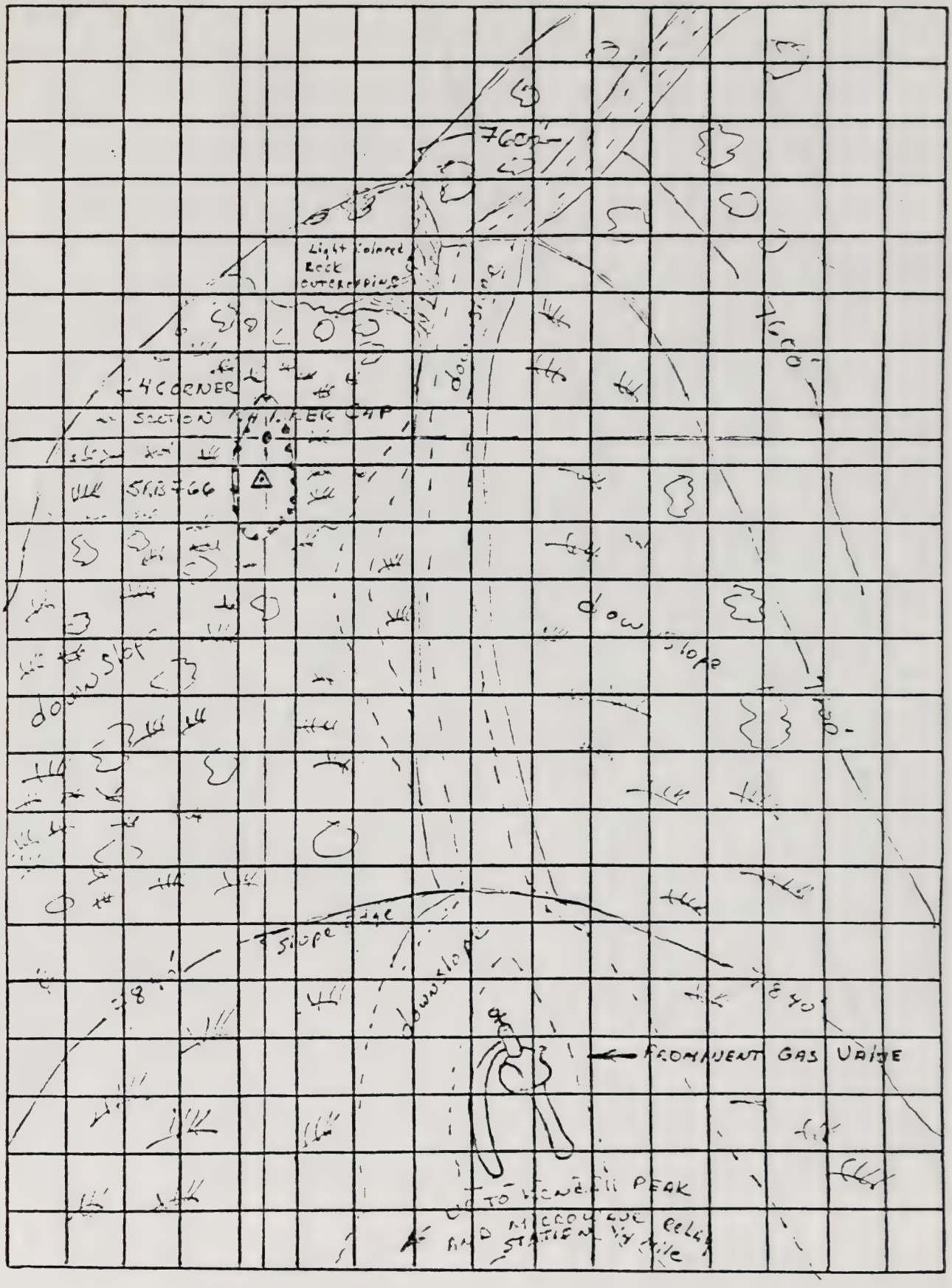
Site Access

The main road to the site is closed by one locked gate, the key is in possession of either White River Electric Co., Western Slope Gas Co., or the landowner, Phil Jenson. Proceed west of Meeker, Colorado, on Highway 13/789. Go two miles west, take southwest route of the highway junction 13/64. Go south, across White River, 7/10 mi to paved road on west side of Highway 13. Turn west here and proceed up road 7/10 mile to gravelled road on south side. Turn south, go 4/10 mile to road fork; take west fork another 4/10 mile, past private road on the west to another fork. Take west fork again, going almost one mile past vacant buildings, across a drainage to another fork in road. Take road south 1 mile to locked gate; open it, continue west, past a south fork, 4/10 mile across Puckett Gulch to fork. Take south fork up Puckett Gulch to 1.9 mile to fork. Take west fork 1.4 miles to base of Kendall Peak, where a visible microwave relay station is located (owned by Western Slope Gas Co.). A visible gas valve is sticking out of ground by road. Proceed down slope 800 ft. Site is 50-60 ft. west of road and 10 ft. south of a clearly marked 4 corner section cap and geodesic bench mark. Site is marked at datum by a 18"/3/8" steel rebar piece topped by a steel washer and plastic yellow cap incised with the site no., 5RB766.

VI. SITE SKETCH MAP: (50) Indicate extent and nature of site and all major topographic features, permanent modern features, and vegetation zones. Give distances and directional data.

Not to scale:

key:



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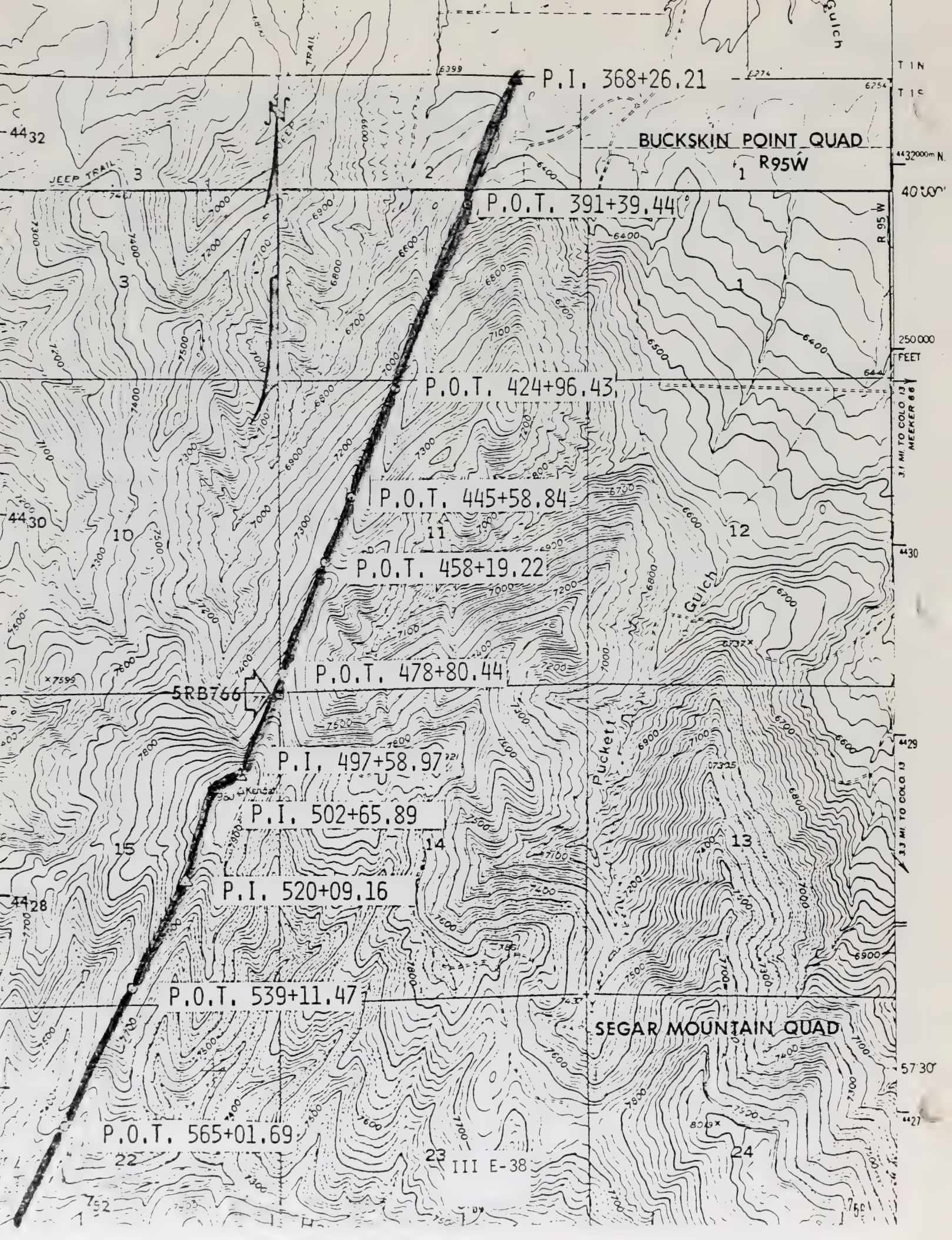
mag.___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P.O.T. 424+96.43
P.O.T. 445+58.84
P.O.T. 458+19.22
P.O.T. 478+80.44
5RB766
P.I. 497+58.97
P.I. 502+65.89
P.I. 520+09.16
P.O.T. 539+11.47
P.O.T. 565+01.69
BUCKSKIN POINT QUAD
SEGAR MOUNTAIN QUAD
R95W
R 95 W
T 1N
T 1S
JEEP TRAIL
Gulch
Puckett Gulch
31 MI. TO COLO. 13 MEEKER 66
33 MI. TO COLO. 13
250 000 FEET
4432
4430
4429
4428
4427
5730
4432000m N.
40°00'
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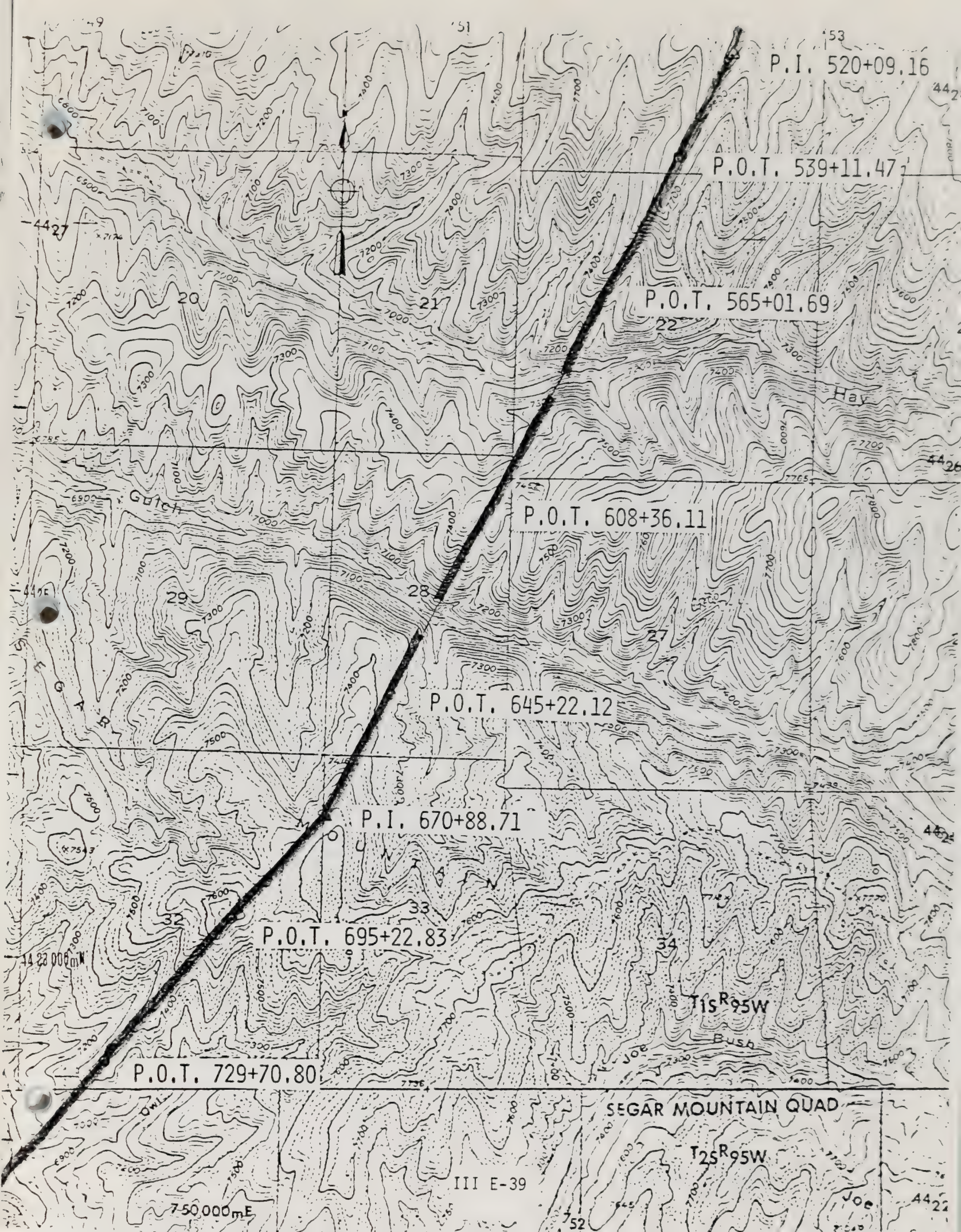
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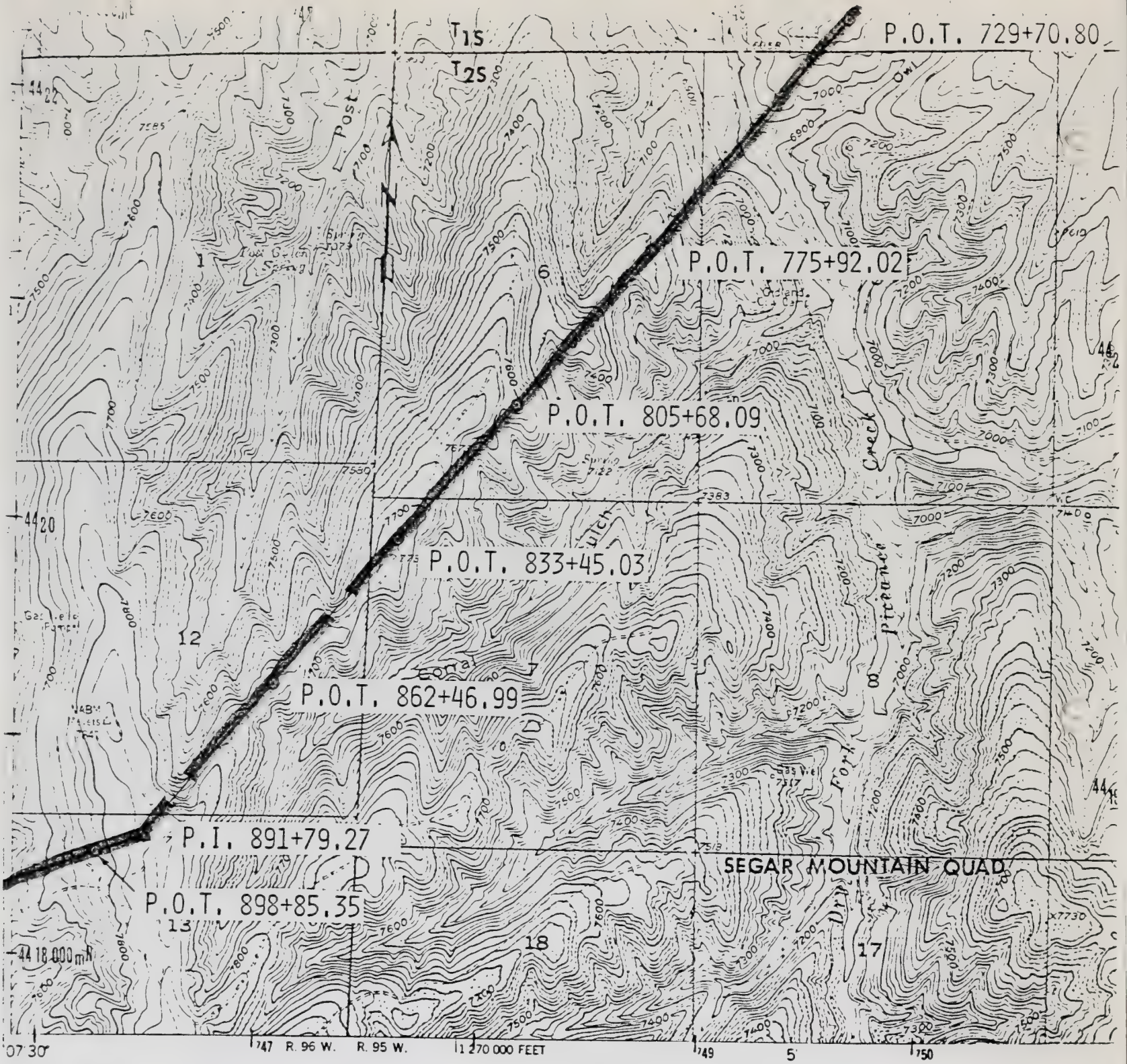
P.O.T. 608+36.11
P.O.T. 645+22.12
P.I. 670+88.71
P.O.T. 695+22.83
P.O.T. 729+70.80
Gulch
Hay
Joe
Bush
Owl
SEGAR MOUNTAIN QUAD
T1S R95W
T2S R95W
4428 000mN
750,000mE
III E-39

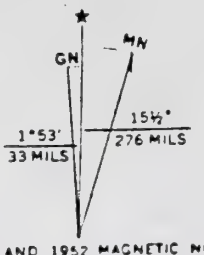


Mapped, edited, and published by the Geological Survey

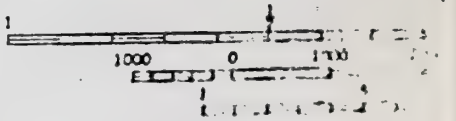
Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1948. Field check 1952

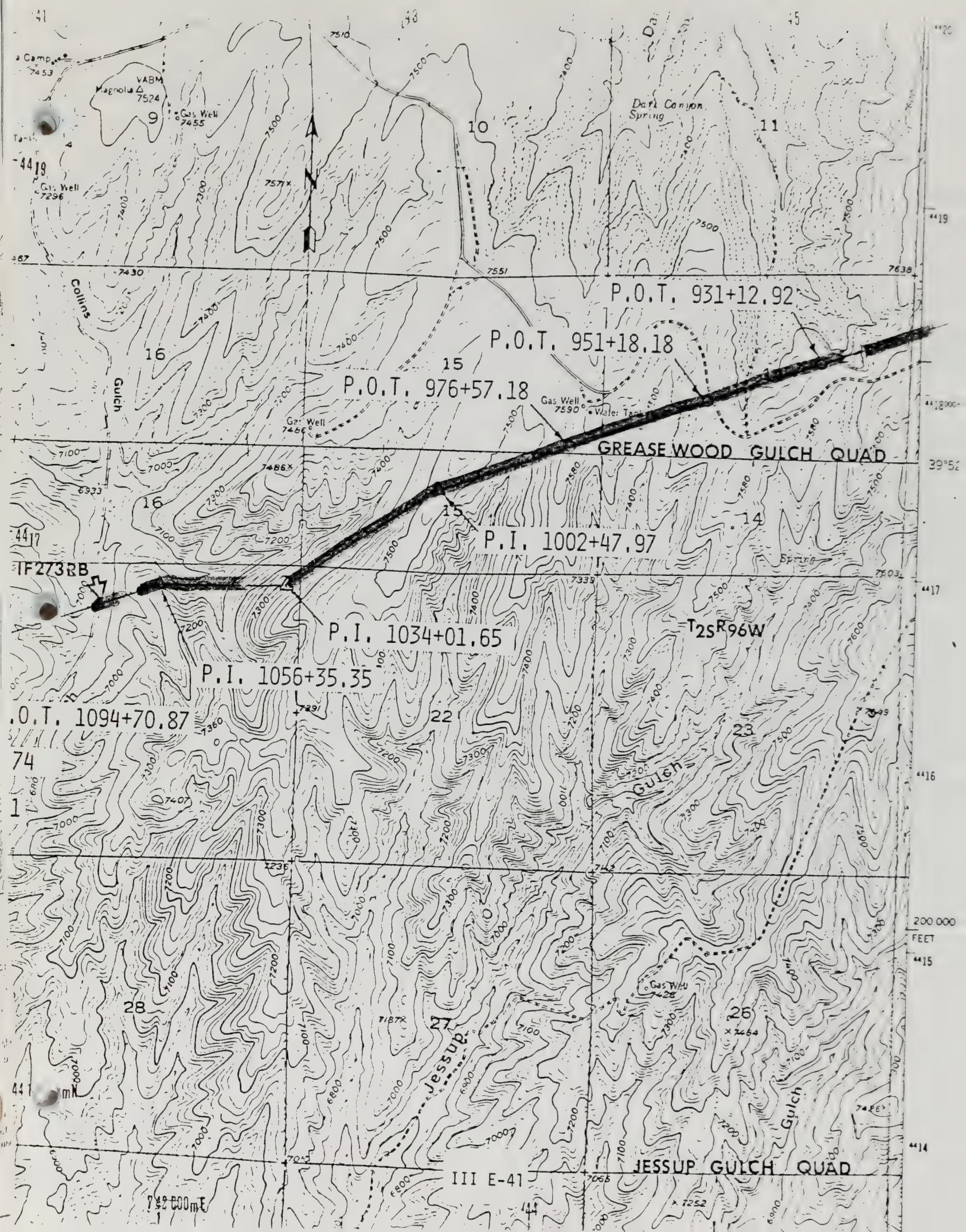
Polyconic projection. 1927 North American datum
10,000 foot grid based on Colorado coordinate system, north zone
1000 meter Universal Transverse Mercator grid ticks, zone [illegible] shown in blue



UTM GRID AND 1952 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



THIS MAP COMPLETE [illegible]
FOR SALE BY U. S. GEOLOGICAL SURVEY
A FOLDER DESCRIBING TOPOGRAPHIC MAPS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P.O.T. 951+18.18
P.O.T. 976+57.18
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P.I. 1002+47.97
IF273RB
P.I. 1034+01.65
P.I. 1056+35.35
P.O.T. 1094+70.87
T2S R96W
JESSUP GULCH QUAD
III E-41
Dark Canyon Spring
Collins Gulch
Jessup Gulch
Gas Well 7455
Gas Well 7296
Gas Well 7590
Gas Well 7486
Gas Well 7428
Water Tank
Spring
Magnola 7524
7571
7486
7187
7252
7264
7430
7551
7638
7503
7339
7291
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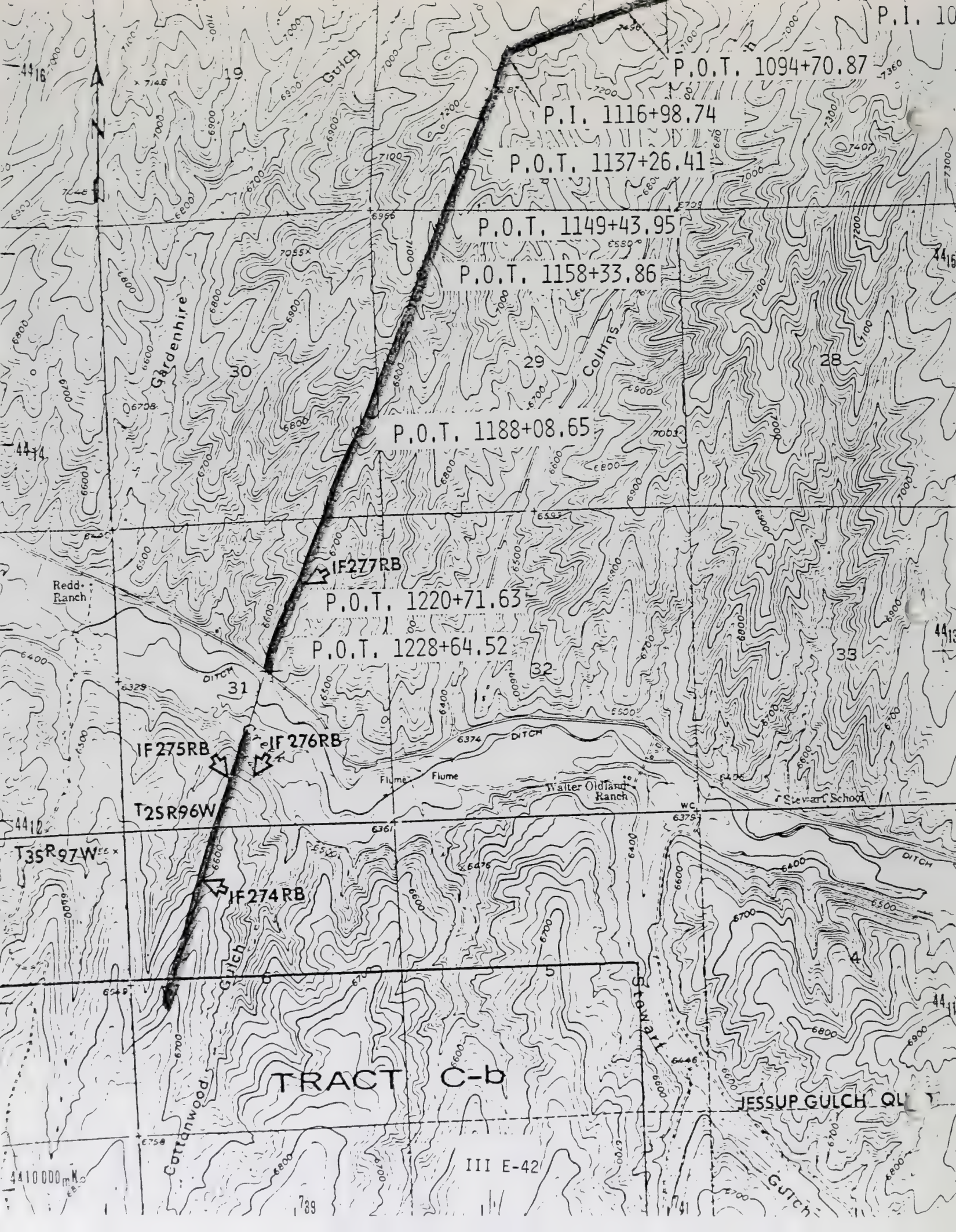
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P.O.T. 1094+70.87
P.I. 1116+98.74
P.O.T. 1137+26.41
P.O.T. 1149+43.95
P.O.T. 1158+33.86
P.O.T. 1188+08.65
P.O.T. 1220+71.63
P.O.T. 1228+64.52
IF277RB
IF275RB
IF276RB
IF274RB
Redd Ranch
Walter Oldland Ranch
Stewart School
Gardenhire Gulch
Counts
Flume
Flume
DITCH
DITCH
DITCH
T2SR96W
T3SR97W
Cottonwood Gulch
Stewart Gulch
Gulch
TRACT C-b
JESSUP GULCH QU
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III E-42

SCENIC VALUES STUDY

INDUSTRIAL
HEALTH & SAFETY

III F SCENIC VALUES STUDY

No additional studies were made during this time period.

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INDUSTRIAL
HEALTH & SAFETY

III G INDUSTRIAL HEALTH AND SAFETY

Periodic reports on Health and Safety Activities have been requested by the Area Oil Shale Supervisor. Such reports are those prepared by the C-b Project and all contractors for distribution to outside Federal and State agencies, i.e., Mine Safety and Health Administration (MSHA) and the Colorado Division of Mines and inspection reports made by these agencies and received by the Project and all contractors at the C-b site.

1) Quarterly Employment Report (Table III G-1; 3 pages). On the bottom of this report the Injury Rate (IR) is to be recorded. See also Section III H - Traffic Load.

2) Injury and Illness Report (Table III G-2; 1 page).

3) Colorado Division of Mines Inspection Reports. On these reports (#3 and #4), responsive comments are to be made on the disposition of the citations (abated or reason not abated). (Table III G-3; 8 pages and 33 pages listing citations and disposition).

4) MSHA Inspection Reports (Table III G-4; 4 pages).

It is noted there that the reproduction quality of these reports is the best obtainable. Originals are on file at the C-b Tract.

Quarterly Mine Employment and Coal Production Report

Table III G-1

U.S. Department of Labor
Mine Safety and Health Administration

Do Not Write In This Space

O.M.B. No. 44-R1761; Approval Expires December 1982

This report is required by law (30 U.S.C. § 813; 30 C.F.R. Part 50). Failure to report can result in the institution of a civil action for relief under 30 U.S.C. § 818 respecting an operator of a coal or other mine, and assessment of a civil penalty against an operator of a coal or other mine under 30 U.S.C. § 820 (a). An individual who, being subject to the Federal Mine Safety and Health Act of 1977 (30 U.S.C. § 801 et seq.) knowingly makes a false statement in any report can be punished by a fine of not more than $10,000 or by imprisonment for not more than 5 years, or both, under 30 U.S.C. § 820 (f). Any individual who knowingly and willfully makes any false, fictitious, or fraudulent statements, conceals a material fact, or makes a false, fictitious, or fraudulent entry, with respect to any matter within the jurisdiction of any agency of the United States can be punished by a fine of not more than $10,000, or imprisoned for not more than 5 years, or both, under 18 U.S.C. § 1001.

OTY
1st Quarter
1979

1. Fill out this form as completely as possible and return the first sheet of this report to →
2. If it is necessary to make any address changes, indicate corrected information on this form.
3. This preaddressed form is only for the operation with I.D. number as shown. DO NOT use this form for any other operation. →
4. SAND AND GRAVEL operators report employment data under code 03 or 06 as appropriate, except for data on office workers which should be reported under code 99.
5. Only operators of coal mines should enter production data in column (4) below.

MSHA, Health and Safety Analysis Center
P.O. Box 25367, Federal Center
Denver, Colorado 80225

1 0510 C03

DATE REPORT COMPLETED
MO. DAY YR.
FOR FIRST QUARTER (JAN THRU MAR)

MAIL BEFORE APRIL 1979

1. Persons Working, Employee-Hours, and Coal Production

(1) Operation Sub Unit Code(s) previously reported:		Code	(2) Average number of persons working during quarter	(3) Total employee-hours worked during the quarter	(4) Production of clean coal during quarter, (short tons)
Underground Mine	Underground	01			
	Surface Shops, Yards, Etc.	02			
Surface Mine (including shops and yards)	Strip, Open Pit, or Quarry	03			
	Auger (Coal Mine Only)	04			
	Culm Bank or Refuse Pile (coal mine only)	05			
	Dredge	06			
	Other (Metal/Non-metal Surface Mining)	12			
	Independent Shops or Yards	17			
Mill Operations, Preparation Plant, or Breaker (include associated shops and yards)		30			
Office (professional and clerical workers at the mine or plant)		99	28	12,443.7	

2. Other Reportable Data

How many MSHA reportable injuries or illnesses did you have this quarter?

To be contacted regarding this report — Name: Don McClure — Title: Safety Supervisor — Phone: 242-8463, ext. 33

If this report is being submitted by a contractor or lessee check here ☐

IF ANY INFORMATION BELOW IS INCORRECT PLEASE ENTER CORRECT INFORMATION HERE:

COUNTY

OPERATION NAME

OPERATING COMPANY NAME AND ADDRESS

MESA I.D. NO. 0505.01 RIO BLANCO COUNTY

C B TRACT OPERATION NAME IL VENTO

OPERATING COMPANY NAME AND ADDRESS
OCCIDENTAL OIL SHALE INC
PICEANCE CREEK RD
RIFLE CO 81651

III G-2

This report is required by law (30 U.S.C. § 813; 30 C.F.R. Part 50). Failure to report can result in the institution of a civil action for relief under 30 U.S.C. § 818 respecting an operator of a coal or other mine, and assessment of a civil penalty against an operator of a coal or other mine under 30 U.S.C. § 820 (a). An individual who, being subject to the Federal Mine Safety and Health Act of 1977 (30 U.S.C. § 801 et seq.) knowingly makes a false statement in any report can be punished by a fine of not more than $10,000 or by imprisonment for not more than 5 years, or both, under 30 U.S.C. § 820 (f). Any individual who knowingly and willfully makes any false, fictitious, or fraudulent statements, conceals a material fact, or makes a false, fictitious, or fraudulent entry, with respect to any matter within the jurisdiction of any agency of the United States can be punished by a fine of not more than $10,000, or imprisoned for not more than 5 years, or both, under 18 U.S.C. § 1001.

Gilbert 1st Quarter 1979

1. Fill out this form as completely as possible and return the first sheet of this report to →
2. If it is necessary to make any address changes, indicate corrected information on this form.
3. This preaddressed form is only for the operation with I.D. number as shown. DO NOT use this form for any other operation. →
4. SAND AND GRAVEL operators report employment data under code 03 or 06 as appropriate, except for data on office workers which should be reported under code 99.
5. Only operators of coal mines should enter production data in column (4) below.

MSHA, Health and Safety Analysis Center
P.O. Box 25367, Federal Center
Denver, Colorado 80225
0503149 M
1 0510 C03

DATE REPORT COMPLETED
04 | 04 | 79
MO. DAY YR.

FOR FIRST QUARTER
(JAN THRU MAR)

MAIL BEFORE
APRIL 15 1979

1. Persons Working, Employee-Hours, and Coal Production

(1) Operation Sub Unit Code(s) previously reported: 01 02 99		Code	(2) Average number of persons working during quarter	(3) Total employee-hours worked during the quarter	(4) Production of clean coal during quarter, (short tons)
Underground Mine	Underground	01	30	13,881 ½	
	Surface Shops, Yards, Etc.	02	52	24,400 ½	
Surface Mine (including shops and yards)	Strip, Open Pit, or Quarry	03			
	Auger (Coal Mine Only)	04			
	Culm Bank or Refuse Pile (coal mine only)	05			
	Dredge	06			
	Other (Metal/Non-metal Surface Mining)	12			
	Independent Shops or Yards	17			
Mill Operations, Preparation Plant, or Breaker (include associated shops and yards)		30			
Office (professional and clerical workers at the mine or plant)		99	28	15,715	

2. Other Reportable Data

How many MSHA reportable injuries or illnesses did you have this quarter? None

Person to be contacted regarding this report	Name	Title	Phone
	Dale L. Frisch	Safety Supversior	303-242-8463 Ext 69

▶ If this report is being submitted by a contractor or lessee check here ☐

IF ANY INFORMATION BELOW IS INCORRECT PLEASE ENTER CORRECT INFORMATION HERE

COUNTY

OPERATION NAME

OPERATING COMPANY NAME AND ADDRESS

MESA I.D. NO. 0503149 COUNTY RIO BLANCO

OPERATION NAME C-B TRACT

OPERATING COMPANY NAME AND ADDRESS
GILBERT CORP OF DELAWARE
DRAWER 1640
RIFLE CO 81650

III G-3

Form 7000-2 (July 78) (Replaces MESA Jan. 78 edition, which may be used)

Return to MSHA

Quarterly Mine Employment and Coal Production Report

U.S. Department of Labor
Mine Safety and Health Administration

Do Not Write In This Space: Table III G-1 — Page 3 of 3 — O.M.B. No. 44-R1761; Approval Expires December 1982

Parsons / 1st Quarter 1979

This report is required by law (30 U.S.C. § 813; 30 C.F.R. Part 50). Failure to report can result in the institution of a civil action for relief under 30 U.S.C. § 818 respecting an operator of a coal or other mine, and assessment of a civil penalty against an operator of a coal or other mine under 30 U.S.C. § 820 (a). An individual who, being subject to the Federal Mine Safety and Health Act of 1977 (30 U.S.C. § 801 et seq.) knowingly makes a false statement in any report can be punished by a fine of not more than $10,000 or by imprisonment for not more than 5 years, or both, under 30 U.S.C. § 820 (f). Any individual who knowingly and willfully makes any false, fictitious, or fraudulent statements, conceals a material fact, or makes a false, fictitious, or fraudulent entry, with respect to any matter within the jurisdiction of any agency of the United States can be punished by a fine of not more than $10,000, or imprisoned for not more than 5 years, or both, under 18 U.S.C § 1001.

1. Fill out this form as completely as possible and return the first sheet of this report to →
2. If it is necessary to make any address changes, indicate corrected information on this form.
3. This preaddressed form is only for the operation with I.D. number as shown. DO NOT use this form for any other operation.
4. SAND AND GRAVEL operators report employment data under code 03 or 06 as appropriate, except for data on office workers which should be reported under code 99.
5. Only operators of coal mines should enter production data in column (4) below.

MSHA, Health and Safety Analysis Center
P.O. Box 25367, Federal Center
Denver, Colorado 80225

0503148 M
1 0510 C03

DATE REPORT COMPLETED
4 13 79
MO. DAY YR.

FOR FIRST QUARTER
(JAN THRU MAR)

MAIL BEFORE
APRIL 15 1979

1. Persons Working, Employee-Hours, and Coal Production

(1) Operation Sub Unit Code(s) previously reported: 01 02 99		Code	(2) Average number of persons working during quarter	(3) Total employee-hours worked during the quarter	(4) Production of clean coal during quarter, (short tons)
Underground Mine	Underground	01			
	Surface Shops, Yards, Etc.	02			
Surface Mine (including shops and yards)	Strip, Open Pit, or Quarry	03			
	Auger (Coal Mine Only)	04			
	Culm Bank or Refuse Pile (coal mine only)	05			
	Dredge	06			
	Other (Metal/Non-metal Surface Mining)	12			
	Independent Shops or Yards	17	126.2	80,781	
Mill Operations, Preparation Plant, or Breaker (include associated shops and yards)		30	~~33~~	~~15,360~~	
Office (professional and clerical workers at the mine or plant)		99	30	15,360	

2. Other Reportable Data

How many MSHA reportable injuries or illnesses did you have this quarter? 1

	Name	Title	Phone
Person to be contacted regarding this report	George Glass,	Safety Supervisor	(303) 242-8463, ext. 60

If this report is being submitted by a contractor or lessee check here ☐

IF ANY INFORMATION BELOW IS INCORRECT PLEASE ENTER CORRECT INFORMATION HERE:

COUNTY Rio Blanco

OPERATION NAME C-b Shale Oil, Inc.

OPERATING COMPANY NAME AND ADDRESS

Ralph M. Parsons
2372 "G" Rd, Box 2687
Grand Junction
Colorado
81501

MESA I.D. NO. 0503148 COUNTY RIO BLANCO

OPERATION NAME C-B SHALE OIL VENTURE

OPERATING COMPANY NAME AND ADDRESS
OCCIDENTAL OIL SHALE INC
2372 G ROAD PO BOX 2687
GRANDJUNCTION CO 81501

III G-4

TABLE II G-2

C-b TRACT MONTHLY INJURY REPORT - 1979

January -	Man hours	
	contractors	38,896
	Occidental	4,589
February -	Man hours	
	contractors	27,824
	Occidental	4,573
March -	Man hours	
	contractors	28,459
	Occidental	4,311
April -	Man hours	
	contractors	34,336
	Occidental	5,254.5
May -	Man hours	
	contractors	32,376
	Occidental	4,521.5

In the first five months of 1979 the contractors had only one lost-time accident; the frequency rate is $\frac{1(\text{lost-time}) \times 200{,}000}{239{,}074.7 \text{ man hours exposed}} = 0.83.$

They carried this injury for 60 lost-time days; severity measure = 50.19. Occidental had no accidents during this time period.

Total number of inspections by MSHA. (2)

March 19 - 28 No citations issued
May 8 - 10 No citations issued

Inspections by Bureau of Mines.

January 3
February 14
March 7
March 27
April 26
May 16

DIVISION OF MINES
Department of Natural Resources

Table III G-3

INSPECTION REPORT

Date 1-3-79 Number 1-3 County Las Animas

A.R.D.I. Elk Mountain — Name of Operation

Mine — Kind of Operation: Mine, Mill, Quarry, etc.

[illegible] — Name of Operator or Contractor

[illegible] — Operator's Address

[illegible] — Name of Owner or Possessor

[illegible] — Owner's Address

[illegible] — Name of Person in Charge

[illegible] — Address and Telephone Number of Person in Charge

[illegible] — Name of Compensation Insurance Company

[illegible] — Products (List products or intended products)

Total men employed 15 Underground 0 Surface 15 Hours 24 Monthly Production -0-

☐ Producing ☐ Development ☐ Part-Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year None Were they reported to the Division of Mines?

Location of Property [illegible]

Date of last inspection 11-22-78 All references are to Bulletin 20

Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations, CRS 1973, 34-40-113.

1. A Safety belt shall be worn when there is a danger of falling from the working place 5.131 Para (5)(a-c) abated 1-3-79

2. Proper Eye Protection Shall be Utilized when using grinder. abated 1-3-79

3. Hearing protection shall be worn in the Generator House. Sec. 165 Para 2 57.5-50(b) 1-3-79

4. When work must be performed from ladders, a Safety belt must be used and the ladder Shall be extended from the Bottom. Sec. 75 Para 2 1-3-79 Abated 1-3-79

Remarks:

Have former recommendations been complied with? YES

Persons accompanying Inspector: [illegible] [illegible] Title: Safety Inspector

Cooperation received Excellent

Metal Mining Inspector — District (3)

I have received a copy of this report for the Operator:

Address

STATE OF COLORADO

NORMAN R. BLAKE
Director

1313 Sherman St.
Denver, Colorado 80203
Telephone 839-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Date 2-14-79 Number H-10 County Rio Blanco

C.B. Oil Shale — Name of Operation
Mine (Exact Sinking) — Kind of Operation: Mine, Mill, Quarry, etc.
Ralph Parsons — Name of Operator or Contractor
P.O. box 111 Rifle, Colo. — Operator's Address
Occidental Oil Shale Inc. — Name of Owner or Possessor
2312 S Rd. box 2687 Grand Junction — Owner's Address
C.J. Deitrick 242-8463 — Name of Person in Charge
P.O. box 111 Rifle, Colo. — Address and Telephone Number of Person in Charge
Colo. State Comp. — Name of Compensation Insurance Company
Products (List products or intended products)

Total men employed 75 Underground 0 Surface 75 Hours 34 Monthly Production —0—

☐ Producing ☑ Development ☐ Part-Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year 7 Were they reported to the Division of Mines? yes
Location of Property Tract C/E Sec. 12, T1S R 96

Date of last inspection 1-3-79 All references are to Bulletin 25

Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations. CRS 1973, 34-40-113.

1. The Gas bottles in the hoist room shall be properly secured. Sec. 167 Para 27 (57.16-5) abated 2-14-79
2. The ladders and landings in the shaft shall be enclosed. Sec. 99 Para 14 2-25-79
3. The oil spill on the barrel in the Generator Shall be cleaned. Sec. 111 Para 2 2-14-79
4. The door to the Electric Panel in the hoist room shall be kept closed. Sec. 50 Para 35 abated 2-14-79
5. The hole in the floor in the collar shall be barricaded. Sec. 67 Para 1 abated 2-14-79
6. The steps to the hoist Room shall be equipped with a handrail. Sec. 67 Para 2 57.16-12 2-14-79

Remarks:

Have former recommendations been complied with?

Persons accompanying Inspector: George Gross, Pete Hancock, Paul Bennition — Title: Safety-Supt. Supt. — Conference received George Yde R. Hinds, Metal Mining Inspector — District (3)

I have received a copy of this report for the Operator:

Signed: George Gross — Title: Safety — Address box 392 Leadville — Telephone Number 486-3741

CDM 1 (Rev. 10-77)

READ, KNOW AND PRACTICE YOUR SAFETY RULES

STATE OF COLORADO

NORMAN R. BLAKE
Director

1845 Sherman St.
Denver, Colorado 80203
Telephone: 892-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Date 3-7-79 Number M-16 County Rio Blanco

C.B. Oil Shale Venture — Name of Operation
Mine — Kind of Operation: Mine, Mill, Quarry, etc.
Ralph Parsons — Name of Operator or Contractor
P.O. box 111 Rifle, Colo. — Operator's Address
Occidental Oil Shale Inc. — Name of Owner or Possessor
2372 8 Rd. box 2697 Grand Junction — Owner's Address
C.J. DeTrich 242-8463 — Name of Person in Charge
P.O. box 111 Rifle, Colo. — Address and Telephone Number of Person in Charge
Colo. State Comp. — Name of Compensation Insurance Company
Shaft Development — Products (List products or intended products)

Total men employed 75 Underground 65 Surface 10 Hours 24 Monthly Production —0—

☐ Producing ☑ Development ☐ Part-Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year None Were they reported to the Division of Mines?
Location of Property Tract C-b Sec. 6, 15 R 96 W

Date of last inspection 2-14-79 All references are to Bulletin 20

Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations, CRS 1973, 34-40-113.

1. The Elect dropcord shall be Taken out of service or Provided. (V.E. hoist house) Sec. 50 Para 25 Abated 3-7-79
2. There shall be a written lock-out Procedure established. Sec. 50 Para 19 3-14-79
3. A danger - No smoking Sign shall be Posted at The Oil Storage outside The V.E. Shaft Sec. 147 Para 7 (57.4-2) 3-8-79
4. The heater in The hoist house at V.E. hoist shall be Taken out of Service or made safe. Sec. 50 Para 25 (57.12-25) abated 3-6-79
5. Notice shall be Posted forbidding loitering in The engine room or holding conversations with The hoisman while he is operating a hoist. Sec. 87 Para 8 3-13-79

Remarks:

Have former recommendations been complied with? yes

Persons accompanying Inspector: George Glass, Cody Sears
Title: Safety, Safety
Cooperation received: Good
Joe R. Hebert — Metal Mining Inspector — District (3)
box 392 Seadrille — Address

I have received a copy of this report for the Operator:
Signed: George Glass Title: Safety Supervisor Telephone Number 486-3741

READ, KNOW AND PRACTICE YOUR SAFETY RULES

CDM I (Rev. 1-76)

NORMAN R. BLAKE
Director

1845 Sherman St.
Denver, Colorado 80203
Telephone: 892-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Date 3-27-79 Number H-34 County Rio Blanco

CB Oil Shale Venture — Name of Operation
Mine — Kind of Operation: Mine, Mill, Quarry, etc.

Ralph Parsons — Name of Operator or Contractor
P.O. Box III Rifle Colo. — Operator's Address

Occidental Oil Shale — Name of Owner or Possessor
2372 Stapleton Bldg Grand Junction — Owner's Address

C.J. Leitch 242-3463 — Name of Person in Charge
P.O. box 70 Rifle, Co. 81650 — Address and Telephone Number of Person in Charge

Colo. State Comp. — Name of Compensation Insurance Company
Shaft Development — Products (List products or intended products)

Total men employed 75 Underground 65 Surface 10 Hours 24 Monthly Production —0—

☐ Producing ☑ Development ☐ Part Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year None Were they reported to the Division of Mines?
Location of Property Tract CB Sec 12, T 1 S, R 96 W

Date of last inspection 2-7-79 All references are to Bulletin 20

Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations, CRS 1973, 34-40-113.

1. The switches and boxes outside the day trailer shall be properly grounded. Sec. 50 Para 25 (52.4-9) 3-27-79

2. The oxygen bottle outside the Collar Place shall be secured. Sec. 167 Para 27 (52.16.5) abated 3-27-79

3. Valves on oxygen and acetylene tanks shall be kept closed when the contents are not being used. Sec. 167 Para. 28 abated 3-27-79

Remarks:

Have former recommendations been complied with? yes

Persons accompanying Inspector: Bill Wilson, Dale Faith — Title: Safety Engineer (Coal), Safety Engineer — Cooperation received Good

I have received a copy of this report for the Operator: — Metal Mining Inspector — District (5) Box 752 Gunnison Address

Signed: Donald J. McClung — III G-91 — Telephone Number 456-3701

NORMAN R. BLAKE
Director

1313 Sherman St.
Denver, Colorado 80203
Telephone: 839-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Date 4/26/79 Number A-31 County Rio Blanco

C.B. Oil Shale Venture — Name of Operation
Mine - Shaft — Kind of Operation: Mine, Mill, Quarry, etc.
Ralph Parsons Co. — Name of Operator or Contractor
Box 111 Rifle, Colorado — Operator's Address
Occidental Oil Shale Inc. — Name of Owner or Possessor
P.O. 2687 Grand Jct. Colorado 81501 — Owner's Address
C.J. Deitrich 242-8463 — Name of Person in Charge
Box 111 Rifle Colorado — Address and Telephone Number of Person in Charge
Colo. State Comp. — Name of Compensation Insurance Company
Shaft Development — Products (List products or intended products)

Total men employed 240 Underground 80 Surface 160 Hours 24 Monthly Production

☐ Producing ☑ Development ☐ Part-Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year 1 Were they reported to the Division of Mines? Yes
Location of Property Sec 12, 1S, R-96W Tract C-b

Date of last inspection 4/12/79 All references are to Bulletin 20
Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations, CRS 1973, 34-40-113.

1. All unused explosives shall be returned to their proper storage magazines. - Sec 60, Part 21 (576-102) 4/26/79 - VE Shaft - Surface - Abated
2. The 240 V. 15 amp welding outlet box shall be properly mounted on the steel beam at the VE shaft collar and the interior of the box inspected for any damage which may have resulted from heat by attempted welding - Sec. 50, Part 6, (5712-30) 4/26/79
3. The batch plant frame ground wires shall be mechanically protected - Sec. 50, Part 1 (574-9) 5/2/79
4. The facility Con. plant building frame grounding ground wire shall be properly connected - Sec. 50, Part 1 (57.4-9) 4/26/79
5. The covers shall be put back over the exposed electrical connections on the Fuel Regulators in the facility Con. building - Sec. 50 - Part 35. (57.12-32) 4/26/79

Remarks:
Have former recommendations been complied with? No - Number 2 on Report A-27

Persons accompanying Inspector: Dan Mahoney C.D.M., Cody Spears - Shift Stripper, Cy Kunkle - Title: Asst. Coal Mine Inspector, Safety Engineer Trainee, Part-Time Coal Mine Inspector — Cooperation received Good
Donald W. Adigman
Metal Mining Inspector — District (3)
Rt. 1 Box 136 B, Buena Vista, Colo. 81211
Address

I have received a copy of this report for the Operator:
Signed: Cody Spears Title: Safety Engr. Telephone Number 395-2715

READ, KNOW AND PRACTICE YOUR SAFETY RULES

CDM 1 (Rev. 10-77)

STATE OF COLORADO

NORMAN R. BLAKE
Director

1313 Sherman St.
Denver, Colorado 80203
Telephone 839-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Report No. 4-31 Page 2

C.O. oil Shale Venture — Name of Operation

mine - SHAFT — Kind of Operation: Mine, Mill, Quarry, etc.

*6, The sides of the sub collar of the service shaft shall be protected in such a manner that foreign objects cannot fall into the shaft, - Sec. 140 - part 6, (57.19-100) 4/27/79

Signed: Gerald W. Ashman Metal Mining Inspector – District (3) Telephone Number 395-2715

CDM 1-d

READ, KNOW AND PRACTICE YOUR SAFETY RULES

STATE OF COLORADO

NORMAN R. BLAKE
Director

1313 Sherman St.
Denver, Colorado 80203
Telephone: 839-3401

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Date 5/16/79 Number A-38 County Rio Blanco

C.B. Oil Shale Venture — Name of Operation
Ralph Parson's Co. — Name of Operator or Contractor
Occidental Oil Shale Inc. — Name of Owner or Possessor
C.J. Deitrich 242-8463 — Name of Person in Charge
Colo. State Comp. — Name of Compensation Insurance Company

Mine - Shaft — Kind of Operation: Mine, Mill, Quarry, etc.
Box 111, Rifle, Colorado — Operator's Address
Box 268, Grand Jct. Colo. 81501 — Owner's Address
Box 111, Rifle, Colorado — Address and Telephone Number of Person in Charge
Shaft Development — Products (List products or intended products)

Total men employed 190 Underground 60 Surface 120 Hours 24 Monthly Production —

☐ Producing ☑ Development ☐ Part-Time ☐ Exploration ☐ Idle Other

Number of accidents to date this year 1 Were they reported to the Division of Mines? Yes
Location of Property Sec. 12, T. 2 S., R. 96 W. Tract C-b

Date of last inspection 4/26/79 All references are to Bulletin 20
Having completed an inspection of the above named operation, I find that the items listed below must be given immediate attention in order to comply with Colorado Statutes and Division of Mines Rules and Regulations, CRS 1973, 34-40-113.

1, The electrical wires feeding into the electrical control (2) boxes at the V.E. shaft collar shall be provided with bushing & strain relievers. - Sec. - 21, para. 23, (57.12-45) 5/17/79

2, Safety chains or suitable locking devices shall be installed on the air hoses to the yellow air tugger and air tugger in the shaft collar, in the shaft on the west deck. - Sec. - 9, para. 3, (57.13-21) 5/16/79

3, The safety latch on the No. 1 sinking bucket shall be repaired to function properly at the service shaft. - Sec. - 56, para. 8, (57.7-2) 5/16/79 - Abated

4, All loose rock shall be barred down around the perimeter of the bottom of the shaft form in the service shaft before any other work continues. - Sec. - 11, para. 4, (57.3-6) 5/16/79 - Abated

*5, A lock out device shall be provided for all shaft hoists. - Sec. - 59 - para. 19. (57.12-17) 5/17/79

Remarks:
Have former recommendations been complied with? No lockout devices have not been furnished for the hoists.
Persons accompanying Inspector: Cody Spears - George Glass, Paul Pendleton, Jim Hedrick, Jack Smith, Shaft Supt. & Shift Foreman
Title: Safety Engr. - Safety Supv.
Cooperation received Good
Gerald W. Adelman
Metal Mining Inspector - District (3) 8/21
I have received a copy of this report for the Operator:
Signed George Glass
Title: Safety Supervisor
Address Rt. 1 Box 136B, Dumont Valley, Colo.
Telephone Number 395-2715

READ, KNOW AND PRACTICE YOUR SAFETY RULES

CDM I (Rev. 10-77)

Table III G-3

STATE OF COLORADO

NORMAN R. BLAKE
Director

1313 Sherman St
Denver, Colorado 80203
Telephone 839-340

DIVISION OF MINES
Department of Natural Resources

INSPECTION REPORT

Report No A-38 Page 2

C.B. OIL SHALE VENTURE
Name of Operation

MINE - SHAFT
Kind of Operation: Mine, Mill, Quarry, etc.

6. BETTER housekeeping shall be employed on the mat decks & collar of the SERVICE SHAFT - SEC. -114, PART 1, (57.11-1) 5/17/79

7. the guard rail shall be extended around the hoist ~~(both sets)~~ - Gooseneck for the SERVICE SHAFT - SEC. -81, part 1. (57.14-1) 5/18/79

Signed Gerald W. Waldman Met or – District (3) Telephone Number 395-2711

CDM 1-d

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 325405

☒ CITATION (SEE REVERSE) ☒ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 03/20/79 (MO/DA/YR) TIME 1520 (24 HR CLOCK)

SERVED TO Dale Frish, Safety Supervisor OPERATOR Gilbert Corporation of Delaware

MINE C-b Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 107-a, 104-a VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0019-00120

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The hoistman of the V & E hoist was unable to backout the hoist from an overtravel condition. Suspicion exists as to a possible electrical control problem in that circuitry.

AREA OR EQUIPMENT V & E Hoist

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE __/__/__ (MO/DA/YR) TIME ____ (24 HR CLOCK) SIGNATURE Ronald J. Kenowden 0656 (AR)

ACTION TO TERMINATE It was found that the hoistman was not operating the controls in proper sequence.

DATE 03/20/79 (MO/DA/YR) TIME 1620 (24 HR CLOCK) SIGNATURE Ronald J. Kenowden 0656 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

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III G-15

UNITED STATES DEPARTMENT OF LABOR -- MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 325406

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 03/20/79 (MO/DA/YR) TIME 1000 (24 HR CLOCK)

SERVED TO Dale Frish, Safety Supervisor OPERATOR Gilbert Corporation of Delaware

MINE C-b Slate Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-a ____-____-____-__ VIOLATION OF SECTION ____-____-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00025

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE A portable resistor space heater had defective wiring and was not grounded in the VLE Roist house.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/20/79 (MO/DA/YR) TIME 1800 (24 HR CLOCK) SIGNATURE Ronald J. Renowden 0656 (AR)

ACTION TO TERMINATE

DATE __/__/__ (MO/DA/YR) TIME ____ (24 HR CLOCK) SIGNATURE ____ (AR) ☐ SEE SUBSEQUENT ACTION SHEET

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No 0325406-A DATED 03/20/79 (MO/DA/YR)

☒ SUBSEQUENT ACTION ☐ CONTINUATION ☒ CITATION ☐ ORDER DATE 03/21/79 (MO/DA/YR) TIME 1030 (24 HR CLOCK)

SERVED TO Bob Reseigh, Project Manager OPERATOR Dilbert Corporation of Delware

MINE C-b Shale Oil MINE I.D. 05-03149-___ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW The cord was cut from the heater and the heater was thrown in the trash can.

☐ EXTENDED TO: DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK) ☐ VACATED DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK)

☒ TERMINATED ☐ MODIFIED ☐ SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 001

SIGNATURE Ronald J. Renowden 0656 AR

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... mine operator ...

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III G-17

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 325407

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 03/21/79 (MO/DA/YR) TIME 1000 (24 HR CLOCK)

SERVED TO Bob Reagin, Project Manager OPERATOR Gilbert Corporation of Delaware

MINE C-B Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-a-____-____-____-____-____

VIOLATION OF SECTION ____-____-____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00032

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The cover plate for the cargo winch control cabinet was not in place. No testing or repairs were being performed at that time.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED ____/____/____ (MO/DA/YR)

TERMINATION DUE DATE 03/26/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK) SIGNATURE Ronald J. Renowden 0656 (AR)

ACTION TO TERMINATE

DATE ____/____/____ (MO/DA/YR) TIME ____ (24 HR CLOCK) SIGNATURE ____ ____ (AR) ☐ SEE SUBSEQUENT ACTION SHEET

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326768

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1240 (24 HR CLOCK)

SERVED TO Bob Pedersen Project Mgr. OPERATOR Gilbert Corp.

MINE Cub Creek coal MINE I.D. 05-03179-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ___-___-___ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0011-00002

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

Work decks were not provided with guard rail on opening where persons could fall through. Toe boards were not provided

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK) SIGNATURE Patty C. Dalaya 0453 (AR)

ACTION TO TERMINATE

DATE 03/01/79 (MO/DA/YR) TIME 1330 (24 HR CLOCK) SIGNATURE Patty C. Dalaya 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-18

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326769

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK)

SERVED TO Bob Roseigh Project Mgr OPERATOR Gilbert Corp

MINE C-B Shale Oil MINE I.D. 05-03147-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-____-____ OF THE ACT OR

PART AND SECTION 57.0020-0003C OF TITLE 30 CODE OF FEDERAL REGULATIONS.

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE three scaffolding were standing upright unsecured on end at stairway landing on vent escape way head frame

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1200 (24 HR CLOCK) SIGNATURE Patty C. Dejoya 0483 AR

ACTION TO TERMINATE Scaffolding was secured

DATE 03/01/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK) SIGNATURE Patty C. Dejoya 0483 AR ☐ SEE SUBSEQUENT ACTION SHEET

III G-19

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326770

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK)

SERVED TO Bob Keseigh Proj. Mgr. OPERATOR Gilbert Corp.

MINE C.C. Steele Oil MINE I.D. 05-03142-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____

VIOLATION OF SECTION ____-____-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0009-00012

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

A seven x four feet opening was found on travel way on the landing APP 150 ft. up the stairway on headframe of the vent escapeway shaft

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK) SIGNATURE Patty C Dafoya 0453 AR

ACTION TO TERMINATE Opening was covered

DATE 03/01/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK) SIGNATURE Patty C Dafoya 0483 AR ☐ SEE SUBSEQUENT ACTION SHEET

III G-20

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III G-21

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326771

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK)

SERVED TO Bob Keseigh Proj. Mgr. OPERATOR Gilbert Corp.

MINE Cub Shale Pit MINE I.D. 05-03142-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-d-_____ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0014-00014

TYPE OF INSPECTION CAL ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

The Wisseto Stationary grinder in the shop was not equipped with face shield or goggles

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1000 (24 HR CLOCK) SIGNATURE Patty A Defazio 0853 AR

ACTION TO TERMINATE Goggles were provided

DATE 03/01/79 (MO/DA/YR) TIME 1440 (24 HR CLOCK) SIGNATURE Patty A Defazio 0853 AR ☐ SEE SUBSEQUENT ACTION SHEET

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U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326772

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 03/28/79 (MO/DA/YR) TIME 1430 (24 HR CLOCK)

SERVED TO Dch Research Proj. mgr. OPERATOR Gilbert Corp.

MINE C.B. Shale Cr. MINE I.D. 05-03142-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-H-_____ VIOLATION OF SECTION ____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00068

TYPE OF INSPECTION CCL ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE Transformer station by headhouse was not posted against entry

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 0900 (24 HR CLOCK) SIGNATURE Pat E Dyfaga 0483 (AR)

ACTION TO TERMINATE Station was posted

DATE 03/01/79 (MO/DA/YR) TIME 1100 (24 HR CLOCK) SIGNATURE Pat E Dyfaga 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-22

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U.S. DEPARTMENT OF LABOR -- MINE SAFETY AND HEALTH ADMINISTRATION

FORM 7000-3 (3-76)

No 326773

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1430 (24 HR CLOCK)

SERVED TO Sch Research Proj. Mgr. OPERATOR Gilbert Corp

MINE C. P. Shale Oil MINE I.D. C5-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-____-____-__-__

VIOLATION OF SECTION ____-____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.12-00018

TYPE OF INSPECTION AAL

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

The 5000 transformer switch box was not labled to show which unit it controlled at the service hust house

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 0800 (24 HR CLOCK) SIGNATURE Ruby E Lafaye 0483 AR

ACTION TO TERMINATE Switch box was labeled

DATE 03/01/79 (MO/DA/YR) TIME 1100 (24 HR CLOCK) SIGNATURE Ruby E Lafaye 0483 AR ☐ SEE SUBSEQUENT ACTION SHEET

III G-23

III G-24

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U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326774

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1250 (24 HR CLOCK)

SERVED TO Bob Keseigh Proj. Mgr. OPERATOR Gilbert Corp.

MINE Cub Shale Oil MINE I.D. 05-03144-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00018

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

Four HC switch boxes were observed in the hoist house that was not labeled at the service hoist

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 0800 (24 HR CLOCK) SIGNATURE Ralph E. Defazio 0483 (AR)

ACTION TO TERMINATE Switch boxes to pumps were labeled

DATE 03/01/79 (MO/DA/YR) TIME 1100 (24 HR CLOCK) SIGNATURE Ralph E. Defazio 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-25

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U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
(MSHA FORM 7000-3 (3-78))

No 326775

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1500 (24 HR CLOCK)

SERVED TO Peb Research Prod Mgr. OPERATOR Gilbert Corp.

MINE C-b. Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ___-___-___ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00026

TYPE OF INSPECTION E&L ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

The metal gate to the main transformer station was not adequately grounded

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 0800 (24 HR CLOCK) SIGNATURE Patty C. DeJoya 0483 (AR)

ACTION TO TERMINATE Gate was grounded tested

DATE 03/01/79 (MO/DA/YR) TIME 1500 (24 HR CLOCK) SIGNATURE Patty C DeJoya 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-26

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326776

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1500 (24 HR CLOCK)

SERVED TO Bob Keogh proj. mgr. OPERATOR Gilbert Corp.

MINE C.B. Shale pit MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0012-00008

TYPE OF INSPECTION AAL ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

The 480 volt electrical wires were not Properly bushed and insulation was pulled back from Conduit box located on production shaft collar

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 0800 (24 HR CLOCK) SIGNATURE Pat E Dugan 0483 AR

ACTION TO TERMINATE Wires were Bushed

DATE 03/01/79 (MO/DA/YR) TIME 1600 (24 HR CLOCK) SIGNATURE Patty E Dugan 0483 AR ☐ SEE SUBSEQUENT ACTION SHEET

III G-27

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326777

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/12/79 (MO/DA/YR) TIME 1600 (24 HR CLOCK)

SERVED TO Bob Keough Prod. Mgr. OPERATOR Gilbert Corp.

MINE C.O.S. Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.12002-00008

TYPE OF INSPECTION 01A ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

Electrical control switch was damaged and insulation on wires were damaged on winch at the production shaft collar

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1100 (24 HR CLOCK) SIGNATURE Roy E Dykes 0483 (AR)

ACTION TO TERMINATE Switch was repaired

DATE 03/01/79 (DA/YR) TIME 1700 (24 HR CLOCK) SIGNATURE Roy E Dykes 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No 0326778-1 DATED 03/28/79 (MO/DA/YR)

☒ SUBSEQUENT ACTION ☐ CONTINUATION ☒ CITATION ☐ ORDER DATE 05/09/79 (MO/DA/YR) TIME 1530 (24 HR CLOCK)

SERVED TO Pete Hancock Supt OPERATOR Gilbert Corp

MINE C-B Shale oil MINE I.D. 05-03149-___ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW

Insulating mat was put in place on the floor at the 4th E day room where the switch for the electric water heater

☐ EXTENDED TO: DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK) ☐ VACATED DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK)

☒ TERMINATED ☐ MODIFIED ☐ SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 004 SIGNATURE Patty C Jafaye 0483 (AR)

III G-28

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No 0326779-1 DATED 03/28/79 (MO/DA/YR)

☒ SUBSEQUENT ACTION ☐ CONTINUATION ☒ CITATION ☐ ORDER DATE 05/07/79 (MO/DA/YR) TIME 1535 (24 HR CLOCK)

SERVED TO Pete Hancock Supt OPERATOR Gilbert Corp

MINE C.S Hale oil MINE I.D. 05-03149-___ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW

The decks on the floor were covered at the generator room

☐ EXTENDED TO: DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK) ☐ VACATED DATE ___/___/___ (MO/DA/YR) TIME ____ (24 HR CLOCK)

☒ TERMINATED ☐ MODIFIED ☐ SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 004

SIGNATURE Rudy G Infante 0483 (AR)

III G-29

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No 0326780-1 DATED 03/28/78 (MO/DA/YR)

☒ SUBSEQUENT ACTION ☐ CONTINUATION ☒ CITATION ☐ ORDER DATE 05/09/79 (MO/DA/YR) TIME 1630 (24 HR CLOCK)

SERVED TO George Glass Safety OPERATOR Ralph M. Parsons

MINE C-B Shale oil MINE I.D. 05-03148-___ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW

"No Smoking" signs were posted around the propane tanks at the batch plant

☐ EXTENDED TO: DATE ___/___/___ (MO/DA/YR) TIME ___ (24 HR CLOCK) ☐ VACATED DATE ___/___/___ (MO/DA/YR) TIME ___ (24 HR CLOCK)

☒ TERMINATED ☐ MODIFIED ☐ SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 004

SIGNATURE Ralph C Safety 0483 (AR)

III G-30

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326781

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 03/20/79 (MO/DA/YR) TIME 0830 (24 HR CLOCK)

SERVED TO Bob Reseigh Proj mgr. OPERATOR Gilbert Corp

MINE C.B. Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_,____-__-__ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0019-00121

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

Complete records were not kept of inspections and the tests were not made of VEE hoisting equipment. at the VEE hoist house numerous mechanical problems documented in the log book did not show if they had been corrected

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/21/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK) SIGNATURE Ofc C Ogaya 0483 (AR)

ACTION TO TERMINATE

DATE __/__/__ (MO/DA/YR) TIME ____ (24 HR CLOCK) SIGNATURE ____ ____ (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-31

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326782

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 03/21/79 (MO/DA/YR) TIME 1130 (24 HR CLOCK)

SERVED TO Bob Reseigh Proj mgr. OPERATOR Gilbert Corp.

MINE C.B. Shale Oil MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-____-____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0019-00108

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

"Men Working in Shaft" Signs were not Posted while men were working in shaft at the VEE Shaft & ~~the Service Shaft~~

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/22/79 (MO/DA/YR) TIME 1700 (24 HR CLOCK) SIGNATURE Paty C Dafoya 0483 (AR)

ACTION TO TERMINATE Signs were posted at the collar of the shafts

DATE 03/__/__ (MO/DA/YR) TIME _____ (24 HR CLOCK) SIGNATURE Paty C Dafoya 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-32

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326784

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 05/07/79 (MO/DA/YR) TIME 1700 (24 HR CLOCK)

SERVED TO Fcte Hancock Supt. OPERATOR Gilbert Corp.

MINE C-B Anthracite MINE I.D. 05-03149-___ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION _____ OF THE ACT OR

PART AND SECTION 57.0005-0005b OF TITLE 30 CODE OF FEDERAL REGULATIONS.

TYPE OF INSPECTION C04 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE Six miners at the bottom of the production shaft were exposed to noise levels of 119 to 120 dBA as measured by a sound level meter at the operators ear. The maximum permissible noise level exposure for any period of time is 115 dBA The miners were wearing hearing protection and the AREA OR EQUIPMENT drills were silenced

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 05/30/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK) SIGNATURE ▶ Inspector 0483 (AR)

ACTION TO TERMINATE

DATE __/__/__ (MO/DA/YR) TIME _____ (24 HR CLOCK) SIGNATURE ▶ ____ (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-33

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326785

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 05/09/79 (MO/DA/YR) TIME 1100 (24 HR CLOCK)

SERVED TO Pete Hancock Supt

OPERATOR Dilled Corp

MINE C B Strip pit

MINE I.D. 05-03148-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____

VIOLATION OF SECTION ____-____-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0009-00002

TYPE OF INSPECTION 004

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The Cat 966 C front end loader equipped with audible back up alarm was on but not operable. Loader was working & loading around the head frame of the production shaft, & there were workers around in the area

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 05/09/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK) SIGNATURE ▶ Porfy C Tafoya 0483 (AR)

ACTION TO TERMINATE The back up alarm was fix

DATE 05/09/79 (MO/DA/YR) TIME 1130 (24 HR CLOCK) SIGNATURE ▶ Porfy C Tafoya 0483 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-34

III G-35

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 326786

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 05 / 09 / 79 (MO / DA / YR) TIME 1500 (24 HR CLOCK)

SERVED TO Pete Hancock Supt. OPERATOR Delbert Corp

MINE C & B Mobile #1 MINE I.D. 05-03149-1 (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____

VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.0011-00001

TYPE OF INSPECTION C04

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE

The shear, deck at the production shaft was not kept clean of explosives material while men were working below

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO / DA / YR)

TERMINATION DUE DATE 05 / 15 / 79 (MO / DA / YR) TIME 1400 (24 HR CLOCK) SIGNATURE Patty C Dyer 0483 (AR)

ACTION TO TERMINATE

DATE __/__/__ (MO / DA / YR) TIME _____ (24 HR CLOCK) SIGNATURE ____ __ (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-36

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UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 328165

[X] CITATION (SEE REVERSE) [ ] ORDER OF WITHDRAWAL (SEE REVERSE)
DATE 03/20/79 (MO/DA/YR) TIME 1000 (24 HR CLOCK)

SERVED TO Dale Trish, Safety Supervisor OPERATOR Gilbert Corp of Delaware

MINE C-B Trust MINE I.D. 25-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-a-_____

VIOLATION OF SECTION _____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.19-129

TYPE OF INSPECTION 001 [X] SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The hoistman on day shift on 3-20-79 had not made all hoist checks required at the beginning of the shift. A standard operating procedure was not documented or practiced for hoistmen to follow.

AREA OR EQUIPMENT

INITIAL ACTION [ ] NOTICE [ ] CITATION [ ] ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/22/79 (MO/DA/YR) TIME 1630 (24 HR CLOCK) SIGNATURE Rodric M Brelsford – 516 (AR)

ACTION TO TERMINATE

DATE __/__/__ (MO/DA/YR) TIME _____ (24 HR CLOCK) SIGNATURE ▶ ____ (AR) [ ] SEE SUBSEQUENT ACTION SHEET

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No. 03 28165-1 DATED 03/20/79 (MO/DA/YR)

[X] SUBSEQUENT ACTION [ ] CONTINUATION [X] CITATION [ ] ORDER DATE 03/21/79 (MO/DA/YR) TIME 1430 (24 HR CLOCK)

SERVED TO Robert Leseigh, Project Manager OPERATOR Gilbert Corp of Delaware

MINE CB-Tract MINE I.D. 25-03149-____ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW A preliminary training procedure had been written and posted. This extension is to allow time for training manuals to be written and distributed.

[X] EXTENDED TO: DATE 03/28/79 (MO/DA/YR) TIME 1600 (24 HR CLOCK) [ ] VACATED DATE ___/___/___ (MO/DA/YR) TIME _____ (24 HR CLOCK)

[ ] TERMINATED [ ] MODIFIED [ ] SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 001

SIGNATURE Richard M. Breland 5 16 (AR)

III G-37

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III G-38

UNITED STATES DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3 (3-78)

No 328166

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 03/21/79 (MO/DA/YR) TIME 1030 (24 HR CLOCK)

SERVED TO Robert Keough, Project Manager OPERATOR Gilbert Corp. of Delaware

MINE C-B Tract MINE I.D. 05-03149-_____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-a-_____

VIOLATION OF SECTION _____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 50.0012-00041

TYPE OF INSPECTION 001

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE Electrical equipment on the galloway on the VEC shaft was being exposed to extremely wet conditions and was not of water proof design.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/24/79 (MO/DA/YR) TIME 1400 (24 HR CLOCK) SIGNATURE Robert M Breland 5 26 AR

ACTION TO TERMINATE

DATE __/__/__ (MO/DA/YR) TIME _____ (24 HR CLOCK) SIGNATURE ▶ __ __ AR ☐ SEE SUBSEQUENT ACTION SHEET

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
MSHA FORM 7000-3a (3-78)

No 0328166-1 DATED 03 (MO) / 21 (DA) / 79 (YR)

☒ SUBSEQUENT ACTION ☐ CONTINUATION ☒ CITATION ☐ ORDER DATE 05 (MO) / 09 (DA) / 79 (YR) TIME 1600 (24 HR CLOCK)

SERVED TO Pete Hancock Supt OPERATOR Gilbert Corp.

MINE C.B Shale pit MINE I.D. 05-03149-___ (CONTRACTOR)

JUSTIFICATION FOR ACTION CHECKED BELOW

Electrical equipment at the U.E. shaft Galloway was replaced with water resistant installation

☐ EXTENDED TO: DATE ___ (MO) / ___ (DA) / ___ (YR) TIME ___ (24 HR CLOCK) ☐ VACATED DATE ___ (MO) / ___ (DA) / ___ (YR) TIME ___ (24 HR CLOCK)

☒ TERMINATED ☐ MODIFIED ☐ SEE SUBSEQUENT ACTION SHEET

TYPE OF INSPECTION 004 SIGNATURE Ralph E Taylor 0483 (AR)

III G-39

FORM 7000-3 (3-78) U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION No 329431

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1000 (24 HR CLOCK)

SERVED TO Bob Raleigh (prep. manager) OPERATOR Gilbert Corp.

MINE E. B. Shaft #6 MINE I.D. 05-03149-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION _____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.19-2

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The winch located in the collar floor of the production shaft was not anchored to the floor to keep from shifting.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1200 (24 HR CLOCK) SIGNATURE ▶ Dave Robinson – 622 (AR)

ACTION TO TERMINATE Anchor bolts were properly placed to secure the winch to the floor

DATE 03/01/79 (MO/DA/YR) TIME 1145 (24 HR CLOCK) SIGNATURE ▶ Dave Robinson – 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-40

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III G-41

U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION

MSHA FORM 7000-3 (3-78)

No 329432

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1500 (24 HR CLOCK)

SERVED TO George Dial (safety supervisor) OPERATOR Ralph M. Parsons Inc.

MINE CR Mint Coil 1 MINE I.D. 05-03148-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-B-____-____-__-__ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.____4-____50

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE Flammable material including gas, grease, and bags of rags were all stored together in the same storage shed. The shed was located next to the batch plant.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. ____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 02/28/79 (MO/DA/YR) TIME 1515 (24 HR CLOCK) SIGNATURE Dave Robinson 622 (AR)

ACTION TO TERMINATE The gasoline and grease was removed.

DATE 02/28/79 (MO/DA/YR) TIME 1515 (24 HR CLOCK) SIGNATURE 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-42

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UNITED STATES DEPARTMENT OF LABOR -- MINE SAFETY AND HEALTH ADMINISTRATION

MSHA FORM 7000-3 (3-78)

No 329433

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1030 (24 HR CLOCK)

SERVED TO George Blan (safety supervisor)

OPERATOR Ralph M. Parsons Inc.

MINE C.B. State Coal

MINE I.D. 05-02348-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____

VIOLATION OF SECTION _____ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.12-8

TYPE OF INSPECTION 001

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE There were two 110 volt extension cords, located in the beatch room which were inadequately insulated.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1200 (24 HR CLOCK) SIGNATURE Dave Robinson 6123 (AR)

ACTION TO TERMINATE One cord was properly insulated and one was removed from service

DATE 03/01/79 (MO/DA/YR) TIME 1150 (24 HR CLOCK) SIGNATURE Dave Robinson 6123 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

...ty and Health Act ...ring that essential ...inspection on or ...ground mine on ...aving condition ...in the mine area ...reon.

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...table failure ... ...nificantly and substantially contribute to a safety hazard ...exceeding respirable standard

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...o provide safe... ...requirements pending ...ent of an authorized ...to minimize hazards ...transportation of ...is. Upon issuance ...ice, the additional ...nforceable under Act.

...g the significant ..., the inspector ...s violation could ...bstantially contribute ...or safety hazard ...on will be considered ...g whether a pat...

...DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION

...Form 7000-3 (3-78)

No 329434

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE) DATE 02/28/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK)

SERVED TO George Ellis (safety supervisor) OPERATOR Ralph M Parsons Inc.

MINE Cap Shaft Mill MINE I.D. 05-03148-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.12-23

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The electrical terminal was exposed on an open light socket, where the stranded wire broken out. This was located in the storage and tool trailer

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK) SIGNATURE ▶ Dave Robinson 622 (AR)

ACTION TO TERMINATE The terminal was replaced and a new outlet put in place.

DATE 03/01/79 (MO/DA/YR) TIME 1210 (24 HR CLOCK) SIGNATURE ▶ Dave Robinson – 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-43

...LABOR - MINE SAFETY AND HEALTH ADMINISTRATION No 329435

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(MINES ONLY)

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☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1310 (24 HR CLOCK)

SERVED TO George Glass (safety supervisor) OPERATOR Ralph M. Parsons Inc.

MINE C.B. Slick Oil MINE I.D. ___-_____-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A

VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.12-41

TYPE OF INSPECTION AAL ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The junction box on the extension cord which connected to the electric lights on the conveyor belt was damaged to the point of replacing.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK) SIGNATURE Dave Robinson 622 (AR)

ACTION TO TERMINATE The junction box was removed from service.

DATE 03/01/79 (MO/DA/YR) TIME 1200 (24 HR CLOCK) SIGNATURE Dave Robinson 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-44

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U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION
FORM 7000-3 (3-78)

No 329436

☒ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 02/28/79 (MO/DA/YR) TIME 1530 (24 HR CLOCK)

SERVED TO George Ware (safety supervisor) OPERATOR Ralph M. Parsons Inc.

MINE C.I. Utah Oil MINE I.D. 05-03148-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) 104-A-_____ VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.____9-____2

TYPE OF INSPECTION 001 ☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The emergency stop cord located on the conveyor system was not properly anchored on the tail pulley end of the system.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK) SIGNATURE Dave Robinson — 622 (AR)

ACTION TO TERMINATE The emergency stop cord was securely anchored.

DATE 03/01/79 (MO/DA/YR) TIME 1230 (24 HR CLOCK) SIGNATURE Dave Robinson — 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-45

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U.S. DEPARTMENT OF LABOR – MINE SAFETY AND HEALTH ADMINISTRATION

...7000-3 (3-78)

No 329437

☐ CITATION (SEE REVERSE) ☐ ORDER OF WITHDRAWAL (SEE REVERSE)

DATE 03/28/79 (MO/DA/YR) TIME 1600 (24 HR CLOCK)

SERVED TO Dave Hays (safety supervisor) OPERATOR Ralph M. Parsons Inc.

TITLE C.S. State Oil MINE I.D. 05-02148-____ (CONTRACTOR)

TYPE OF ACTION (SEE REVERSE) LCH-A-_____

VIOLATION OF SECTION ____-__-__ OF THE ACT OR OF TITLE 30 CODE OF FEDERAL REGULATIONS.

PART AND SECTION 57.14-1

TYPE OF INSPECTION 201

☒ SIGNIFICANT AND SUBSTANTIAL (SEE REVERSE)

CONDITION OR PRACTICE The Hough front-end loader, serial number 852813, 21 cat did not have a proper guard installed around the cooling fan.

AREA OR EQUIPMENT

INITIAL ACTION ☐ NOTICE ☐ CITATION ☐ ORDER NO. _____ DATED __/__/__ (MO/DA/YR)

TERMINATION DUE DATE 03/01/79 (MO/DA/YR) TIME 1300 (24 HR CLOCK) SIGNATURE Dave Robinson 622 (AR)

ACTION TO TERMINATE A guard was installed around the cooling fan.

DATE 03/11/79 (MO/DA/YR) TIME 1215 (24 HR CLOCK) SIGNATURE Dave Robinson 622 (AR) ☐ SEE SUBSEQUENT ACTION SHEET

III G-46

U.S. DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Mailing Address: P.O. Box 25367, DFC Denver, Colorado 80225
Street Address: 730 Simms Lakewood, Colorado 80215

April 4, 1979 File HLS 5-5

Bill Shriver
Construction Manager
CO Piceance Creek Road, Star Route
Rifle, CO 81650

Dear Mr. Shriver:

A Federal inspection of the C-b Shale Oil Venture, I.D. No. 05-03140, Rio Blanco, Colorado, was conducted March 19-28, 1979. The inspection was made pursuant to Public Law 91-173 (83 STAT. 742) as amended by Public Law 95-164 (91 STAT. 1290).

The type and number of actions taken during the inspection were:

ORIGINAL ACTION THIS INSPECTION	TYPE AND NUMBER OF:		
	Citations	Orders	Other
Issuances	0	0	
Terminations			
Modifications			
Extensions			
ACTIONS ON PREVIOUS VIOLATIONS			
Modifications			
Extensions			
Terminations			

Figures for fourth quarter, 1978, are:

Incidence Rate:	Fatal	Nonfatal
Industry	.13	16.21
This Operation	This information not received on print-out.	

Sincerely yours,
Dennis J. Tobin
for
John E. Cavanaugh
Supervisory Mining Engineer

cc: Levi E. Brake, safety manager
Colorado Division of Mines, director of mines
Peter A. Rutledge, area oil shale supervisor

Operation Address:
Occidental Oil Shale, Inc.
CO Piceance Creek Road,
Star Route
Rifle, CO 81650

Telephone: (303) 242-8463

Issuing Office Address

Roland V. Wilson, Subdistrict Manager
P.O. Box 25367, DFC
Denver, CO 80225

Identification No.: 05-03140

Inspection Date(s): 3/19-28/79

Inspection Code: 001

Company: Occidnetal Oil Shale, Inc.

Mine Name: C-b Shale Oil Venture

City: Rio Blanco County: Rio Blanco State: Colorado

Location: twenty miles from Rio Blanco, CO on Piceance Basin

Type of Mine: underground Mining Method: development Product: oil shale

No. Employees: 75 Work Schedule: Hrs/Shift 8 Shift/day 3 Days/wk. 7

Operating Officials: Bill Shriver, construction manager; Levi E. Brake, safety manager; Cody Spears, senior safety inspector

Inspection Party:

Company:

Union Rep: D.N.A.

Miner's Rep: D.N.A.

MSHA Inspector(s): Ignacio E. Benitez, Rodric M. Breland, Ronald J. Renowden, Porfy C. Tafoya

Other: George Glass, safety (Parsons); Don McClung & Cody Spears, safety (Oxy)

No. of Outstanding Citations: 0

No. of Outstanding Orders: 0

Table III G-4

U.S. DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Mailing Address: P.O. Box 25367, DFC, Denver, Colorado 80225
Street Address: 730 Simms, Lakewood, Colorado 80215

May 11, 1979

File HLS 5-5

Bill Shriver
Construction Manager
Occidental Oil Shale Inc.
CO Piceance Creek Road, Star Route
Rifle, CO 81650

MAY 4 1979

Dear Mr. Shriver:

A Federal inspection of the C-b Shale Oil Venture, I.D. No. 05-03140, Rio Blanco, Colorado, was conducted May 8-10, 1979. The inspection was made pursuant to Public Law 91-173 (83 STAT. 742) as amended by Public Law 95-164 (91 STAT. 1290).

The type and number of actions taken during the inspection were:

ORIGINAL ACTION THIS INSPECTION	TYPE AND NUMBER OF:		
	Citations	Orders	Other
Issuances	0	0	
Terminations			
Modifications			
Extensions			
ACTIONS ON PREVIOUS VIOLATIONS			
Modifications			
Extensions			
Terminations			

Figures for fourth quarter, 1978, are as follows:

Incidence Rate:	Fatal	Nonfatal
Industry	.13	16.21
This Operation	information not received on print-out.	

Sincerely yours,

John E. Cavanaugh
Supervisory Mining Engineer

Enclosures
cc: E. Levi Brake, Safety Manager
Director of Mines, Colorado Division of Mines
Pete A. Rutledge, Area Oil Shale Supervisor

UNITED STATES DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION (MSHA)
METAL AND NONMETAL MINE SAFETY AND HEALTH

eration Address:

Occidental Oil Shale, Inc.
CO Piceance Creek Road, Star Route
Rifle, CO 81650

Telephone: (303) 242-8463

Issuing Office Address

Roland V. Wilson, Subdistrict Manager
P.O. Box 25367, DFC
Denver, CO 80225

Identification No.: 05-03140

Inspection Date(s): 5/8-10/79

Inspection Code: 004

Company: Occidental Oil Shale, Inc.

Mine Name: C-b Shale Oil Venture

City: Rio Blanco County: Rio Blanco State: Colorado

Location: twenty miles from Rio Blanco, CO on Piceance Basin

Type of Mine: underground Mining Method: development Product: oil shale

No. Employees: 75 Work Schedule: Hrs/Shift 8 Shift/day 3 Days/wk. 7

Operating Officials: Bill Shriver, construction manager; E. Levi Brake, safety manager; Cody Spears, senior safety inspector

Inspection Party:

Company: George Glass, safety, Ralph M. Parson's; Cody Spears & Don McLung, safety, Occidental Oil Shale, Inc.

Union Rep: D:N:A.

Miner's Rep: D.N.A.

MSHA Inspector(s): Roland L. Phleps and Porfy C. Tafoya

Other:

No. of Outstanding Citations: 0

No. of Outstanding Orders: 0

GEOLOGY

MATION

TRAFFIC LOAD

III H TRAFFIC LOAD

This section contains data relating to vehicular and passenger load along Piceance Creek road and into the C-b Oil Shale Tract.

A program of monitoring vehicular traffic was started in March 1978. Those counters, identified as counters A, B and C, were placed on Piceance Creek road (See Figure III H-1.) Counter B near the C-b Oil Shale Tract was subsequently moved for short periods of time to count traffic into Oil Shale Tracts C-b and C-a. The locations of the C-b and C-a counters were designated Counter D and Counter E, respectively. Counter data are presented in Table III H-1.

Daily vehicle count at the C-b Guard Shack is presented in Table III H-2. Passenger mile detail for buses have been compiled and presented in Table III H-3.

Table III H-4 presents monthly summaries of activities on the C-b Tract.

Figure III H-1

LOCATION OF COUNTERS FOR TRAFFIC COUNT DATA

DATA TAKEN FROM 3/21/78 TO 10/5/78

1978
TAI

Table III H-1

COUNTER A

Page 1 of 5

ROAD COUNTER INFORMATION

Rio Blanco Store on Piceance Cr Road ½ mile

COUNTER	START DATE	START TIME	FINISH DATE	FINISH TIME	NUMBER COUNTED	REMARKS
	2/27	1000	2/28	1000	459	
A	3/21	1700	3/23	1000	498	
A	3/23	1000	3/27	1700	—	
A	3/27	1700	4/4	1700	5220	= 163 per day
A	4/4	1700	4/7	1700	446	
A	4/7	1700	4/10	1000	1000	
A	4/10	1000	4/12	1700	1410	
A	4/12	1700	4/14	1630	2925	
A	4/14	1500	5/1	0630	1611	
A	5/1	0630	5/5	1500	4451	
A	5/5	1500	5/8	0730	1237	
A	5/8	0730	5/12	1700	4385	
A	5/12	1700	5/15	1000	720	
A	8/28	1630	9/1	0900	8600	
A	9/5	0800	9/12	0900	9312	
A	9/28	1630	10/5	1900	33019	

COUNTER B

1978 THP

ROAD COUNTER INFORMATION 100 feet n West of Cb Tract Road

Piceance Creek Road

COUNTER	START DATE	START TIME	FINISH DATE	FINISH TIME	NUMBER COUNTED	REMARKS
B	7/10	0730	7/11	0940	710	
B	7/11	0940	7/12	1312	1736?	bad - repaired
B	7/12	1312	7/17	0915	1954	
B	7/17	0915	7/20	0730	—	Stuck
B	7/20	0730	7/28	0925	2809	
B	7/28	0925	7/31	0710	327	
B	7/31	0910	8/1	0840	1087	
B	8/1	0840	8/7	0730	3879	
B	8/7	0730	8/10	0830	2692	
B	8/10	0830	8/14	1300	2239	Moved counter to Cb

Table III H-1

COUNTER C

1978
TAP

ROAD COUNTER INFORMATION

Rio BLanco Lake on White River Bridge

COUNTER	START DATE	START TIME	FINISH DATE	FINISH TIME	NUMBER COUNTED	REMARKS
C	3/21	1700	3/23	1100	99	
C	3/30	1630	4/7	1700	1204	
C	4/7	1700	4/10	0800	390	
C	5/3	0630	5/4	0725	758	counter not working repairing
C	5/24	0800	6/1	0800	8354	
C	8/28	1500	9/1	0900	2210	
C	9/5	0900	9/12	0900	2299	

Table III H-1

Page 4 of 5

COUNTER D

1978

TAP

ROAD COUNTER INFORMATION
C6 Tract

by cattle guard

COUNTER	START DATE	START TIME	FINISH DATE	FINISH TIME	NUMBER COUNTED	REMARKS
D	3/27	930	3/28	1645	389	OK
D	3/28	1645	4/4	1630	1115	
D			4/7		-	removed counter road construction
D	4/7	1630	4/10	0930	765	weekend count
D	4/10	0930	4/14	1600	—	broken down
D	Ordered new counters 6/26/78					
D	7/10	0930	7/11	0930	-	repaired
D	7/11	"	7/12	1312	1463 ?	"
D	7/12	1312	7/17	0920	907	
D	7/17	0920	7/20	0730	819?	repaired
D	8/14 Moved Piceance Creek Counter to C-6 Road					
D	8/14	1300	8/17	1510	1899	
D	8/17	1510	8/18	1620	677	
D	8/18	1620	8/21	0830	1146	Weekend
D	8/21	0830	8/23	0900	1610	

THP

Table III H-1

Page 5 of 5

COUNTER E

1978

ROAD COUNTER INFORMATION AT Piceance cr Road And
C-a Traffic On → Ryan Gulch

COUNTER	START DATE	START TIME	FINISH DATE	FINISH TIME	NUMBER COUNTED	REMARKS
E	7/10	1000	7/11	930	578	
E	7/11	0930	7/12	1300	1836	
E	7/12	1300	7/17	0700	2392	
E	7/17	0700	7/18	0930	565	
E	7/18	0930	7/20	0730	1297	
E	7/20.	0730	7/26	0730	2972	new ball
E	7/26	0730	7/28	0915	1280	
E	7/28	0915	7/31	0900	1037	
E	7/31	0900	8/1	0830	701	
E	8/1	0830	8/7	0730	3072	
E	8/7	0730	8/10	0840	1791	
E	8/10	0840	8/14	1330	1674	
E	8/14	1330	8/17	1500	1411	
E	8/17	1500	8/18	1630	495	
E	8/18	1630	8/21	0900	287	Weekend
E	8/21	0900	8/23	0910	1139	

Table III H-2

VEHICLE COUNT AT C-B TRACT GUARD SHACK
1978 - 1979

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Month																															
April														39	33	36	90	89	104	94	87	31	24	123	71	131	106	64	44	22	
May	100	105	80	76	73	26	17	98	96	101	92	77	24	12	93	105	89	66	77	35	19	126	111	94	106	66	-	-	3	119	119
June	137	90	29	71	51	53	64	99	70	35	15	89	82	71	74	56	30	10	52	62	71	52	88	29	12	75	67	29	33	43	
July	10	3	5	3	53	102	67	40	13	88	77	90	84	104	6	3	98	81	103	91	82	29	131	84	98	97	73	160	81	14	85
August	90	71	56	115	16	6	76	82	92	114	104	46	26	120	109	109	113	82	50	44	65	108	75	106	80	17	12	69	60	112	106
September	51	40	3	4	102	81	117	109	43	51	103	116	76	131	103	51	63	130	108	140	96	112	75	64	139	111	120	140	137	70	-
October	23	88	77	97	84	103	133	61	32	58	92	105	107	23	6	49	82	108	38	40	22	2	95	43	79	6	83	33	6	46	74
November	58	96	106	8	1	82	110	92	69	65	33	17	71	94	106	73	93	31	36	110	123	97	91	51	25	30	109	124	81	95	
December	32	71	26	96	88	79	61	63	38	17	78	90	81	103	66	49	17	80	56	47	83	45	5	2	4	79	87	70	92	20	11
January	4	67	83	48	79	31	19	67	98	78	94	80	23	20	92	82	93	69	55	22	15	55	58	81	70	81	8	6	79	83	72
February	72	52	15	11	98	120	88	93	83	38	18	59	90	76	52	56	19	16	11	77	74	70	45	3	8	20	65	67			
March	6	43	9	22	104	124	58	70	73	13	7	71	43	64	73	45	31	19	60	81	62	66	73	22	18	97	106	34	46	6	15
April	28	95	45	50	79	76	31	7	33	72	48	48	41	14	15	79	68	96	71	74	3	11	60	69	69	64	87	19	7	65	

— missing data

weekend days

GTM 5 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

4101 4102 4001

Name C b Shale oil VENTURE Month 6/78 Colo. PUC Permit No.

From	Rifle CB	Rifle CB	Rifle CB							
To	† RETURN	& RETURN	RETURN							
A Miles										
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No Psgrs	No. Psgrs.
1	162	104								
2	176	76								
3		62								
4	77	26								
5		122								
6	117		26							
7	124	161								
8	106	254								
9		160								
10		46								
11	66									
12	58	134	30							
13	168	62								
14	125	73	30							
15	116	158								
16	225	134								
17	19		70							
18										
19	13	163	84							
20		132	116							
21	56									
22		34	165							
23		125								
24			82							
25	18		58							
26	8	106	132							
27										
28										
29										
30										
31										
B Total Psgrs.	1634	2132	793	= 4559	Psgrs.					
C Psgr. Miles	2790	3060	1287	= 7137	Miles					

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers, fractions of miles less than one half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, Line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

_____ Total Passenger Miles (Total Line C) X 001 (1 MILL) = _____ Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

46 1 :5

GTM-5 SM 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name 4101 Cb 4502 S HALe Oil Venture Month Aug Colo. PUC Permit No.

From	MEEKER	MEEKER	4101 Rifle	4007 Rifle	4007 Rifle	4007 Rifle				
To	C-B TRACT	CB TRACT	CB TRACT	CB TRACT	CB	CB				
A Miles	92	92	90	90	90	90				
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.
1	9		60	57	19	21				
2		10	55		11	24				
3	9			62	17					
4	11		7	45	13	48				
5	8				8	29				
6					2					
7		11	26	59		58				
8		10		68		60				
9		10		34	72					
10		12	49			39				
11		9	7		16	44				
12	3				9					
13										
14	12		42	109	42					
15		14		99	39					
16		20	185	46	45					
17		19	34	116	73	50				
18	14		104			30				
19	10		6	24		49				
20	11				23	41				
21		11		40	117	46				
22		27	50	83	124					
23		23		68	44	91				
24		22		133						
25		8	22	46	11	34				
26	4				17					
27			5		3	3				
28		17		14	44	60				
29		17		89		72				
30		15	52	90		40				
31		24	37	80		29				
B Total Psgrs.	91	279	767	1362	744	868	=3736			
C Psgr. Miles	1012.	1656.	3223.	6028.	6200.	1242.	= 16693.			

19,361. (Total Passenger Miles (Total Line C)) X _____ X .001 (1 MILL) = _____ (Passenger Mile Tax)

Enter this amount in Line 3 Tax Return Form GTM-1

INSTRUCTIONS - P CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

Table III H-3

GTM 5 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name CB SHALE OIL VENTURE Month Sept 78 Colo. PUC Permit No. [illegible]-40736

From	Rifle 4001	Rifle 4002	Rifle 4003	Rifle 4101	Mecker 4001	Mecker 4002	Mecker 4003			
To	CB + Return	CB + Return	CB + Return	CB + Return	CB + Return	CB + Return	CB + Return			
A Miles	90	90	90	90	270	270	270			
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No Psgrs	No. Psgrs.
1	71	15	33	36	—	—	—			
2	—	16	—	—	—	—	—			
3	—	—	—	—	—	—	—			
4	—	—	—	—	—	—	—			
5	23	91	39	47		7	—			
6	87	—	77	60		19	—			
7	62	—	42	113	—	21	—			
8	79	44	28	30	17	31	—			
9	—	37	64	—	38	—	—			
10	—	73	28	—	20	—	—			
11	—	140	58	30	41	—	—			
12	—	115	37	86	54	—	—			
13	—	108	66	85	43	—	—			
14	—	85	102	29	67	—	—			
15	41	138	51	18	24	11	—			
16	—	38	25	—	23	—	—			
17	—	106	—	—	19	—	—			
18	87	152	50	22	24	16	—			
19	71	—	64	102	—	34	—			
20	170	—	56	28	4	29	—			
21	71	—	112	35	—	42	—			
22	50	—	101	29	—	36	—			
23	—	—	94	—	—	19	—			
24	69	—	—	—	22	—	—			
25	150	—	83	30	—	47	—			
26	84	42	56	22	14	20	—			
27	41	105	48	29	19	13	—			
28	138	—	65	21	—	26	12			
29	100	90	—	21	—	—	39			
30	—	76	—	—	—	—	66			
31	18	—	—	—	—	—	—			
B Total Psgrs.	1375	1471	1379	827	438	371	117			5978.
C Psgr. Miles	2600	3195	3295	2051	4320	4050	810			

Carrier will show in these spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions. Mileage used must be stated in whole numbers; fractions of miles less than one half to be dropped and one half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

20,321.0 Total Passenger Miles (Total Line C) X 001 (1 MILL) = _____ Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

Table III H-3

GTM-S 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name CB-Shale oil Venture (oxy) Month OCT 78 Colo. PUC Permit No.

From	RIFLE TO CB & RETURN 4001	Rifle to CB & RETURN 4002	Rifle to CB & RETURN 4003	Rifle to CB & RETURN 4004	Meeker TO CB & RETURN 4001	Meeker TO CB & RETURN 4002	Meeker TO CB & RETURN 4003		
To									
A Miles	90 RT	90 RT	90 RT	90 RT	92 RT	92 RT	92 RT		
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.
1		86					13		
2	21	109	53				20		
3	20	74	63		10	13	34		
4		77	51		29		36		
5	41		63		49		16		
6	18		49		70		18		
7		3			10		4		
8					8		4		
9	64		10		7		20		
10		88		87	5		23		
11		91			56		17		
12		94			46		17		
13		56		3	61		4		
14		3					2		
15		1					2		
16		46	39		39		10		
17		55	41		40		17		
18		87	54		13		16		
19		76	48		33				
20		67	39		9		12		
21		2							
22									
23		69	54		27	2	14		
24		71	49		22		15		
25		76	52		20		15		
26		64	60		32		6		
27			48	67	21	11			
28				16		2			
29									
30			79	66	26	6	6		
31		64		79	45				
B Total Psgrs.	164	1359	768	318	678	19	21	335	
C Psgr. Miles	447.0	4374.0	2437.0	810.0	3600.0	510.0	276.0	4174.0	

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter do total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

16,628 Total Passenger Miles (Total Line C) X .001 (1 MILL) = _____ Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

Table III H-3

GTM-5 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name CB SHALE OIL VENTURE Month NOV 78 Colo. PUC Permit No.

From	Rifle CB	Rifle CB	Rifle CB	Rifle CB	Rifle CB	Meeker CB	Meeker CB			
To	Return 4001	Return 4001	Return 4002	Return 4003	Return 4004	Return 4002	Return 4003			
A Miles	90	90	90	90	90	94	94			
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs	No. Psgrs.
1	62			71	32	11				
2	48			67	40	8				
3	44			42	32	7				
4				3		2				
5										
6	43		53		54	6				
7	45		38		84	21				
8	53		64		63	11				
9	61		44		70	15				
10		47	57		37	15				
11			4		6	1				
12										
13		51	52		60	11				
14		55	59		77	15				
15		52	66		85		23			
16		66	51		81	14				
17		50	44	70		13				
18		14			49	6				
19			1							
20		51	62	4	54	19				
21		53	46	5	56	24				
22		51	49		31	24				
23						1				
24		38		1						
25		12	59							
26		7		44	4					
27		71	48		65	25				
28		73	64		75	25				
29										
30										
31				312	1055					
B Total Psgrs.	356	691	861	~~312~~	~~1055~~	274	23			
C Psgr. Miles	430	1998	2890	1170	3960	4198	188			

15134 (Total Passenger Miles (Total Line C)) X _____ X 001 (1 MILL) = _____ Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, line "A," shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

GTM 5 SM 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name C B SINCO OIL COMPANY Month Dec 78 Colo. PUC Permit No.

From	WOR 1 C.S.L.E	WOR 2 Bible	WOR 3 Rile	WOR 4 Rible	WOR 5 Applegate	WOR 6 Passengers	WOR 7 Carriers			
To	C B & Return	C B & Return	C B & Return	C B & Return	C B & Return	C B & Return	C B & Return			
A Miles	90	90	90	90	94	94	94			
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.
1	63	60		62	29					
2	21	9		35	6	30				
3	8	21		10		22				
4	62	99		62	27	9				
5	88	29	74	76		29				
6	113	50	54		25	27				
7	119	7	41		12	21				
8		80	37			19				
9		11	24			7				
10	29	74				6				
11	56	48	58			20				
12	75	62	15			31				
13	84	76	54			24				
14	83	51	48			24				
15	51	82	44			19				
16	29	6	59			7				
17	7	5				2				
18	42	86	71			20				
19	95	41	85			21				
20	50	84	59			26				
21	44	86	64			25				
22	24	39		58		59				
23			21							
24										
25										
26		68	72			13				
27	47	62	70			22				
28	63	58	81				1			
29	46	70	46							
30	72	30								
31	8	72								
B Total Psgrs.	1379	1466	1077	303	125	483	1			
C Psgr. Miles	3600	4500	3105	906	751	3613	47			

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" c[illegible]o" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter d[illegible] the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, Line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

16 517 Total Passenger Miles (Total Line C) X 001 (1 MILL) = _____ Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

Table III H-3

GTM-5 SM 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name C B Shuttle Airport Service Month JAN 79 Colo. PUC Permit No

From	Airport	Airport	Airport to Downtown	Downtown to Airport	Airport	Downtown to Airport	Airport to Downtown				
To	Downtown	Downtown	Downtown	Airport	Downtown	Airport	Downtown				
A Miles	90	90	90	90	94	94	94				
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	
1											
2		106		65		84					
3		45	95	69		25					
4		51	59	84		31					
5		42	55	62	10	8					
6			67								
7			34		10						
8	42	37	120		28						
9	43	91	80		42						
10	36	61	89		22						
11	31	82	84		24						
12	40	50	73	41	10	11	1				
13		55	6			6					
14		10				2					
15		33	44	98		24					
16		66	85	79	7	33					
17		82	51	87	11	19					
18		35	85	74	29						
19		44	67	73	18	9					
20			85		3	7					
21			54			10					
22		53	83	72	14	12					
23		67	108	39		27					
24		60	116	41		22					
25		66	61	64		29					
26		78	50	70		25					
27				86		8					
28				60		3					
29		77	66	86		19					
30		60	128	39		20					
31		55	100	46		120					
B Total Psgrs.	192	1406	1951	1271	228	554	1				
C Psgr. Miles	450	2970	5310	3410	2201	3885	47				

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one half to be omitted and one half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, line "A" item at the top of each column, and cross foot to arrive at "Total" Passenger Miles.

18283 (Total Passenger Miles (Total Line C)) X .001 (1 MILL) = _____ (Passenger Mile Tax)

Enter this amount in Line 3 Tax Return Form GTM-1

5419 passengers

GTM-5 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name [illegible] Month [illegible] Colo. PUC Permit No. [illegible]

From	[illegible]	[illegible]	[illegible]	[illegible]						
To	[illegible]	[illegible]	[illegible]	[illegible]						
A Miles	[illegible]	[illegible]	[illegible]	[illegible]						
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15	[illegible]	[illegible]	13	13						
16	[illegible]	[illegible]	[illegible]	[illegible]						
17	[illegible]	[illegible]	[illegible]	[illegible]						
18	[illegible]	[illegible]	[illegible]	6						
19	[illegible]	[illegible]	15	14						
20	[illegible]	[illegible]	[illegible]	[illegible]						
21	[illegible]	[illegible]	[illegible]	[illegible]						
22	[illegible]	[illegible]	[illegible]	[illegible]						
23	[illegible]	[illegible]	17	15						
24	[illegible]	[illegible]	[illegible]	[illegible]						
25	[illegible]	[illegible]	[illegible]	[illegible]						
26	[illegible]	[illegible]	[illegible]	[illegible]						
27	[illegible]	[illegible]	17	14						
28	[illegible]	[illegible]	17	16						
29										
30										
31										
B Total Psgrs.	[illegible]	[illegible]	[illegible]	[illegible]						
C Psgr. Miles	[illegible]	[illegible]	[illegible]	[illegible]						

[illegible] Total Passenger Miles (Total Line C) X 001 (1 MILL) = [illegible] Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, Line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

GTM-5 SM 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name [illegible] Month [illegible] Colo. PUC Permit No. [illegible]

From	[illegible]	[illegible]	[illegible]	[illegible]						
To	[illegible]	[illegible]	[illegible]	[illegible]						
A Miles	43	43	44	44						
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs	No. Psgrs.	No. Psgrs.	No Psgrs	No. Psgrs.
1	146	111	15	15						
2	169	167	13	12						
3	66	52	10	10						
4	26	21	13	2						
5	165	23	14	15						
6	10	10	2	10						
7	99	107	23	9						
8	106	102	16	15						
9	102	92	10	12						
10	63	91	7	6						
11	53	47	3	5						
12	116	165	15	14						
13	163	72	52	15						
14	116	110	15	13						
15	92	87	14	14						
16	93	20	13	14						
17	57	56	5	5						
18	53	47	9	2						
19	124	26	11	2						
20	163	106	14	12						
21	114	102	14	1						
22	111	90	15	14						
23	100	27	12	14						
24	165	96	11	9						
25	53	50	11	9						
26	55	47	14	12						
27	93	75	15	15						
28	142	131	15	12						
29	112	92	13	2						
30	92	73	10	10						
31	57	34	12	11						
B Total Psgrs.	3234	2791	423	361						
C Psgr. Miles	139360	120113	18252	15524						

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "from" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers, fractions of miles less than one half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, Line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger Miles".

293,453 Total Passenger Miles (Total Line C) X 001 (1 MILL) = $293.45 Passenger Mile Tax

Enter this amount in Line 3 Tax Return Form GTM-1

GTM-5 5M 8-62

SCHEDULE P– PASSENGER MILE DETAIL BY PASSENGER BUSES

This Schedule must accompany monthly form GTM–1 of each Passenger Bus Carrier

Name [illegible] Month [illegible] Colo. PUC Permit No. [illegible]

From	[illegible]	[illegible]	[illegible]	[illegible]						
To	[illegible]	[illegible]	[illegible]	[illegible]						
A Miles	46	46	[illegible]	44						
Date	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.	No. Psgrs.
1	55	52	[illegible]	3						
2	109	107	17	32						
3	113	107	6	10						
4	136	[illegible]	1	4						
5	107	101	17	14						
6	[illegible]	76	14	16						
7	64	52	6	6						
8	53	44	5	7						
9	[illegible]	[illegible]	[illegible]	13						
10	113	[illegible]	12	16						
11	[illegible]	94	16	14						
12	113	94	61	63						
13	107	75	16	9						
14	54	42	[illegible]	11						
15	56	60	14	9						
16	113	93	13	12						
17	135	126	16	15						
18	126	111	16	17						
19	111	106	17	15						
20	95	20	11	16						
21	52	46	[illegible]	[illegible]						
22	17	[illegible]	5	16						
23	104	72	7	7						
24	109	93	15	16						
25	106	101	17	12						
26	81	76	41	31						
27	106	94	12	11						
28	2	15	6	7						
29	2	5	2	2						
30	65	67	39	13						
31										
B Total Psgrs.	2624	2315	439	403						
C Psgr. Miles	120,760	106,490	19,316	17,734						

235,200 (Total Passenger Miles (Total Line C)) X 001 (1 MILL) = 235.20 (Passenger Mile Tax)

Enter this amount in Line 3 Tax Return Form GTM-1

INSTRUCTIONS - READ CAREFULLY

Carrier will show in blank spaces at the top of each column opposite "From" and "To" the various points between which hauling is performed during the month, and opposite "Miles" the actual distance between said points, and will enter daily the total number of passengers carried under their respective captions.

Mileage used must be stated in whole numbers; fractions of miles less than one-half to be dropped and one-half or more to be considered one mile. Passenger miles are determined by multiplying the total passengers line "B" by the miles, Line "A" shown at the top of each column, and cross foot to arrive at "Total" Passenger "Miles".

Table III H-4

Page 1 of 4

C-b Shale Oil Venture

MEMO TO: Levi Brake and [redacted]

FROM: Sally Guehrn
C-b Security

SUBJECT: MONTHLY ACTIVITY REPORT
(Taken from Security Logs at C-b Tract)

DATE: February 1, 1979

January, 1979
month/year

Visitors on Site	548
Vehicles on Site	1749
Incident Reports	3
Accident Reports	15
Security Passengers	12
Security Mileage	3074
Material Gate Passes	29

Employees on Site :

Chen & Associates	1
Gilbert Corporation of Delaware	95
Nielsons, Inc.	12
Oil Field Electric	7
Ortloff Mineral (Colomacco)	22
Oxy (Occidental Oil Shale, Inc.)	29
Ralph M. Parsons Company	29
Scarrow and Walker	4
The Industrial Company (TIC)	5
Weyher Construction Company	24
White and Sons	21

MEMO TO: Levi Brake and Don McClung

FROM: Sally Gudurn
C-b Security

SUBJECT: MONTHLY ACTIVITY REPORT
(Taken from Security Logs at C-b Tract)

DATE: 3-31-79

March 1979
month/year

Visitors on Site	857
Vehicles on Site	1,595
Incident Reports	6
Accident Reports	0
Security Passengers	19
Security Mileage	2,431
Material Gate Passes	48
Delivery Trucks	435

Employees on Site:

Chen & Associates	1
Gilbert Corporation of Delaware	129
Nielsons, Inc.	0
Oil Field Electric	0
Ortloff Mineral (Colomacco)	20
Oxy (Occidental Oil Shale, Inc.)	27
Ralph M. Parsons Company	33
Scarrow and Walker	4
The Industrial Company (TIC)	3
Weyher Construction Company	12
White and Sons	8
Cowans	6

MEMO TO: Levi Brake and Don McClung

FROM: Sally Guehrn
C-b Security

SUBJECT: MONTHLY ACTIVITY REPORT
(Taken from Security Logs at C-b Tract)

DATE: April 1, 1979

April 1979
month/year

Visitors on Site	528
Vehicles on Site	1,588
Incident Reports	0
Accident Reports	1
Security Passengers	20
Security Mileage	2,064
Material Gate Passes	46
Delivery	311

Employees on Site :

Chen & Associates	0
Gilbert Corporation of Delaware	118
Nielsons, Inc.	0
Oil Field Electric	0
Ortloff Mineral (Colomacco)	20
Oxy (Occidental Oil Shale, Inc.)	26
Ralph M. Parsons Company	34
Scarrow and Walker	3
The Industrial Company (TIC)	0
Weyher Construction Company	8
White and Sons	9
Cowans	6

MEMO TO: Levi Brake and Don McClung

FROM: Sally Guehrn
C-b Security

SUBJECT: MONTHLY ACTIVITY REPORT
(Taken from Security Logs at C-b Tract)

DATE: 6-3-79

MAY/ 1979
month/year

Visitors on Site----------529
Vehicles on Site----------1,483
Incident Reports----------1
Accident Reports----------1
Security Passengers----------25
Security Mileage----------1775
Material Gate Passes----------32
DELIVERY TRUCKS----------342

Employees on Site:

Chen & Associates	0
Gilbert Corporation of Delaware	129
Nielsons, Inc.	0
Oil Field Electric	0
Ortloff Mineral (Colomacco)	16
Oxy (Occidental Oil Shale, Inc.)	29
Ralph M. Parsons Company	33
Scarrow and Walker	3
The Industrial Company (TIC)	0
Weyher Construction Company	7
White and Sons	0
Cowans	6
	223

III I GEOLOGY

The surface geology report was presented in Quarterly Data Report #5 and in the Annual Summary and Trends Report.

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IV DATA AUTOMATION

The environmental data base at present is partially manual and partially computerized. For purposes of analysis, data specificity, data security, and data archiving, the data base is being further computerized. It is the intent that all "indicator variables" be entered into RAMIS (Rapid Access Management Information System). Toward this end computer codes have been designed for all environmental station locations and are presented; automation status is reported.

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STATION COORDINATES

STATION COMPUTER CODE

AUTOMATION STATUS

IV A AUTOMATION STATUS

This section presents the status of the automated data base for the C-b Tract environmental data on the Occidental Petroleum Corporation computer system in Houston, Texas.

RAMIS II is a computerized data base management system (DBMS) used by Occidental Oil Shale, Inc. on the C-b Shale Oil Project via the Occidental Computer Center in Houston, Texas. C-b Shale Oil Tract environmental data are being prepared and entered into RAMIS DBMS as a means of making relevant data available for subsequent retrievals for use in reports and impact analyses. The use of this system provides an economical way to store and retrieve selected data in desired formats for reports and for input to analytic models requiring the data. Data are also archived within this system and through magnetic tapes containing the source raw data.

The following environmental data are entered into RAMIS DBMS as of July, 1979:

Water Quality

Springs and Seeps	Oct 1974 thru February 1979
Alluvial Wells	Oct 1974 thru February 1979
Upper Aquifer Wells	Oct 1974 thru November 1978
Lower Aquifer Wells	Oct 1974 thru November 1978

Well Water Levels

Water Levels	Oct 1974 thru April 1979

Air Quality

- Small Trailer (Station AB21, AB22, AB24)
  Oct 1974 thru October 1976
- Large Trailer (Station AB20)
  Oct 1974 thru April 1979
- Large Trailer (Station AB23)
  Oct 1974 thru April 1979
- Meteorological Tower (Station AA23)
  Oct 1974 thru April 1979

Figures IV A-1 through IV A-6 show graphically the status of water levels, water quality, air quality, meteorological and microclimatic data that have been entered into RAMIS DBMS as of May 1, 1979.

Data in RAMIS reside in six files which are presented in Tables IV A-1 through IV A-7. The tables present the list of fieldnames and synonyms. Additional data in the tables are the field and file structure specifications.

Figure IV A-1

HYDROLOGY MONITOPING/REPORTING/DATA BASE STATUS

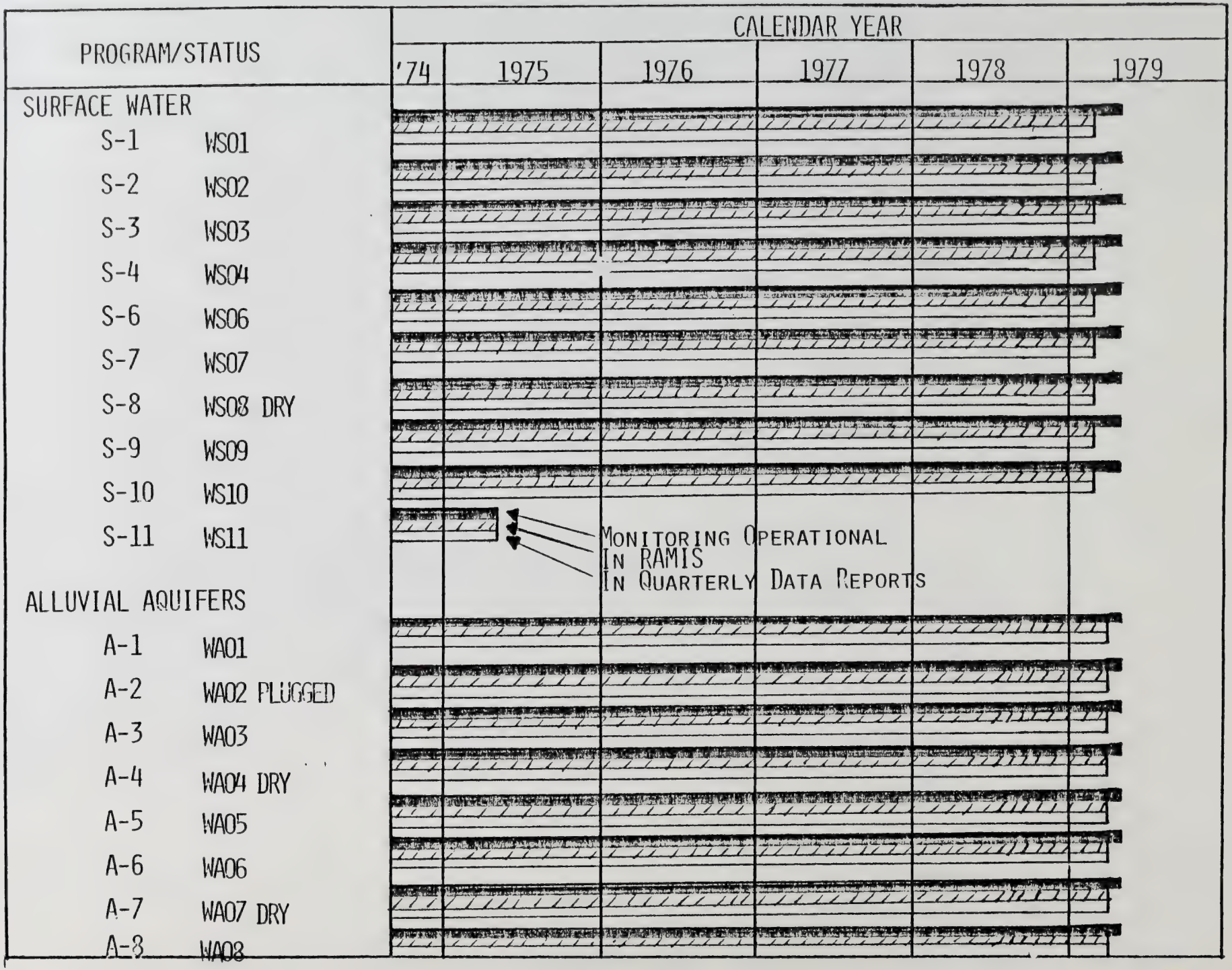

Figure IV A-2 HYDROLOGY MONITORING/REPORTING/DATA BASE STATUS

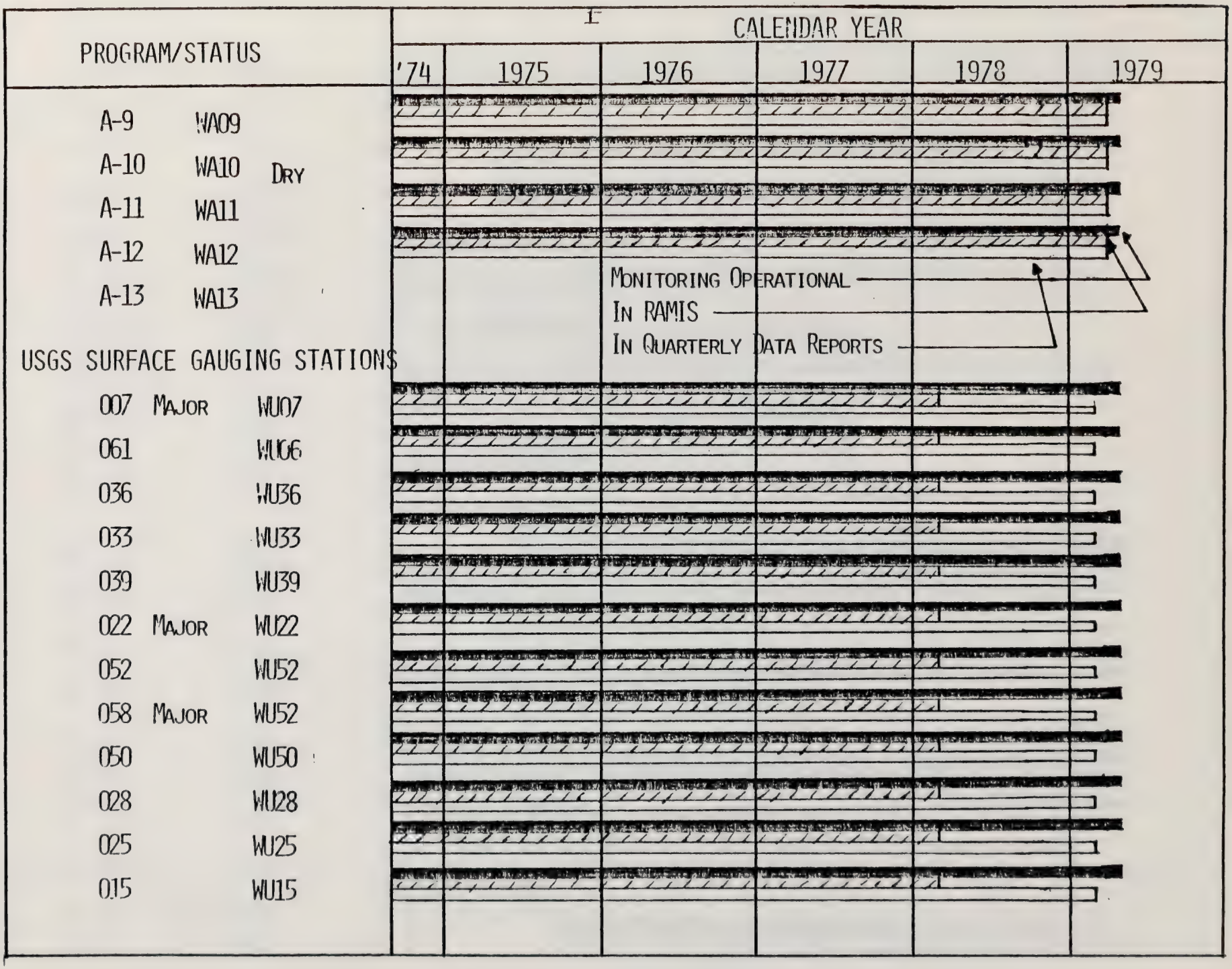

Figure IV A-3

HYDROLOGY MONITORING/REPORTING/DATA BASE STATUS
(WATER LEVELS)

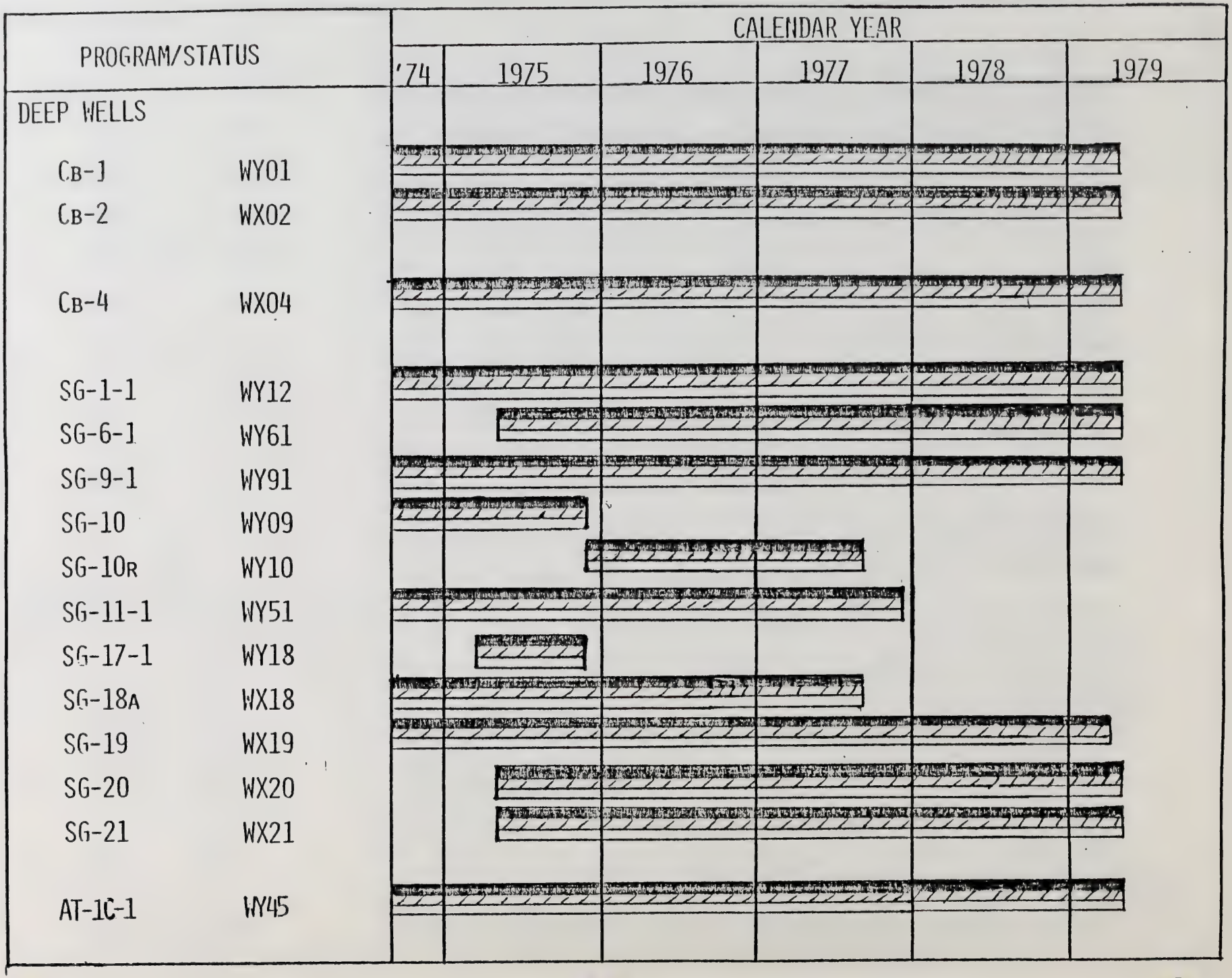

Figure IV A-3
(Continued)

HYDROLOGY MONITORING/REPORTING/DATA BASE STATUS
(WATER LEVELS)

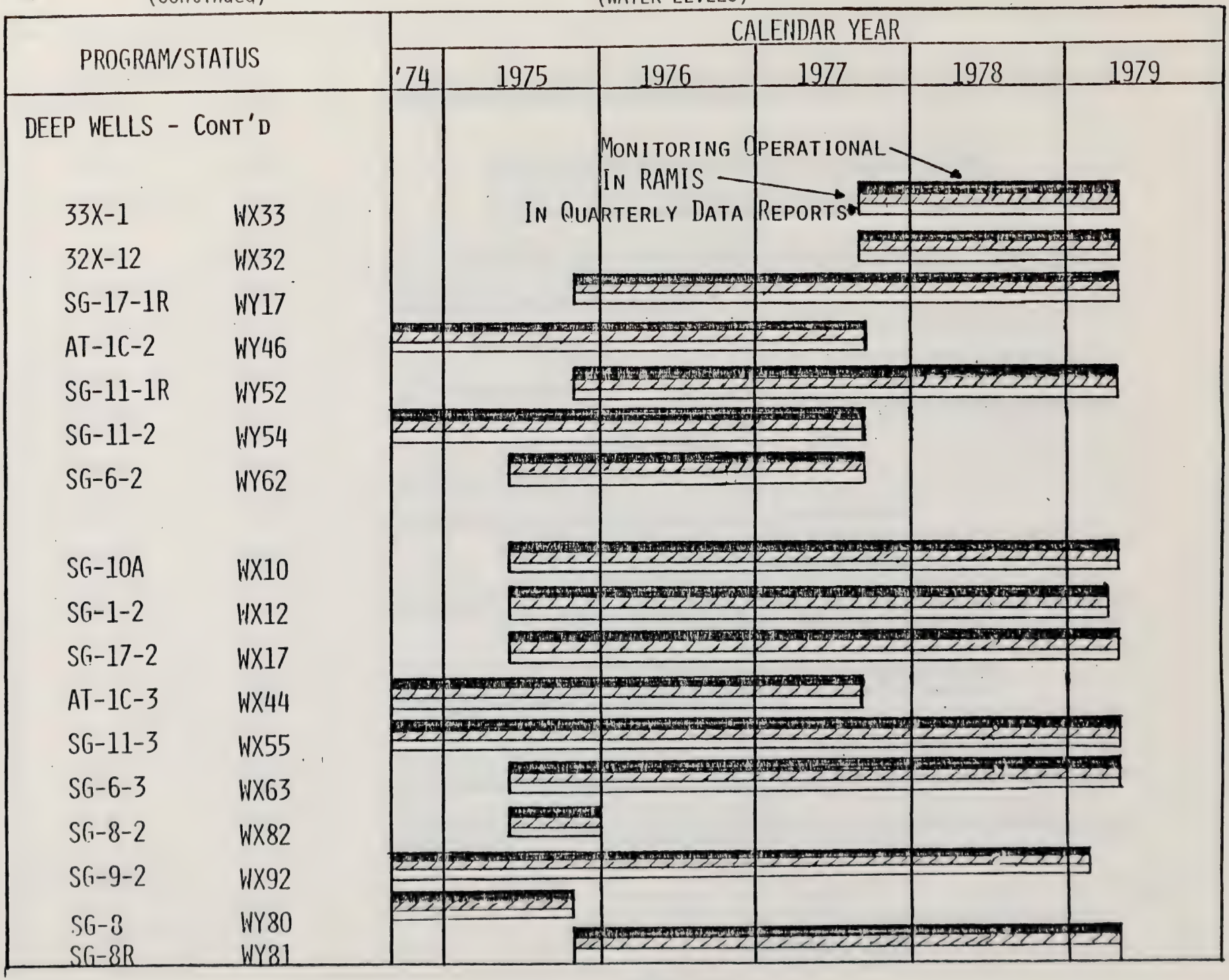

Figure IV A-4

HYDROLOGY MONITORING/REPORTING/DATA BASE STATUS

(WATER QUALITY)

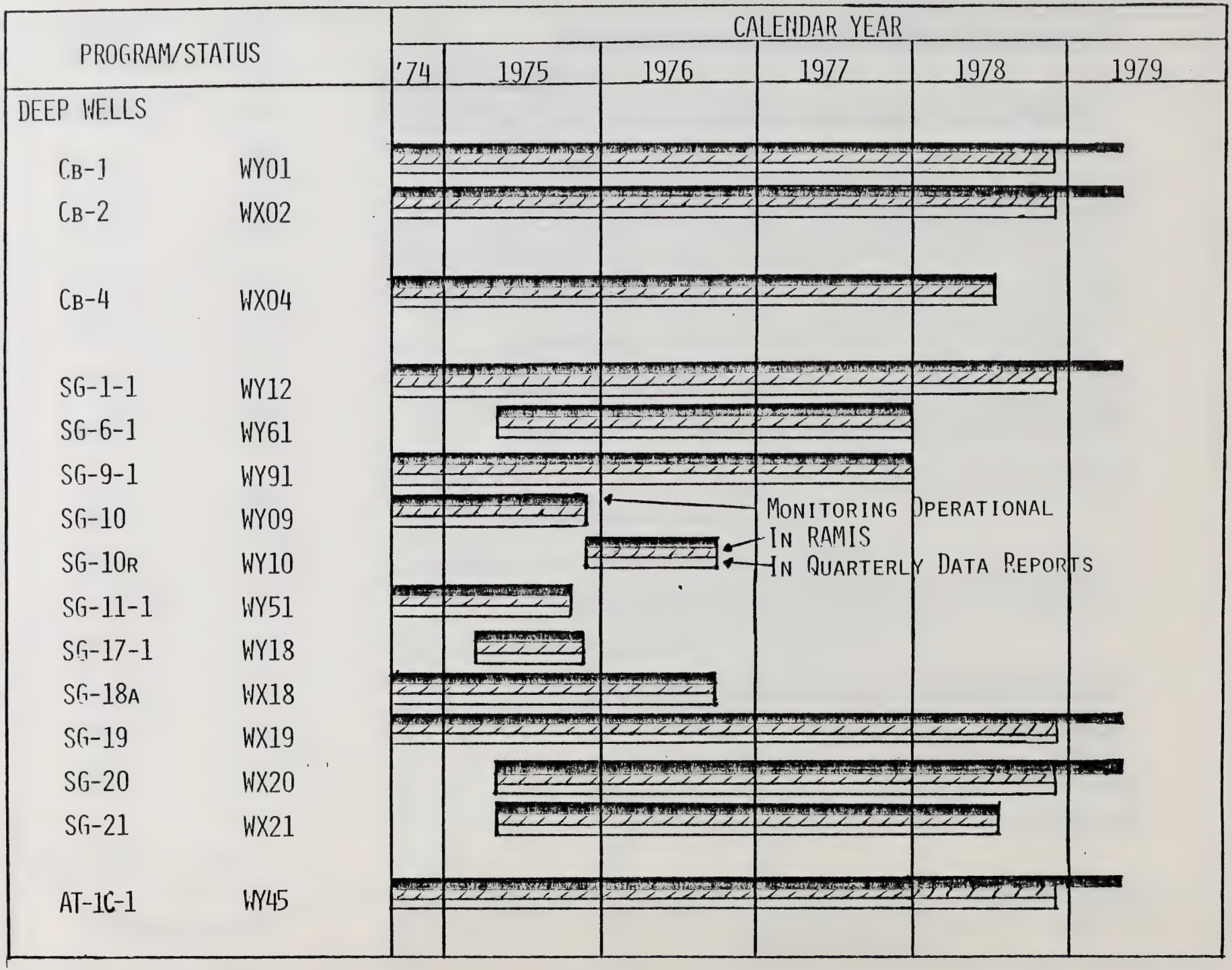

Figure IV A-4
(Continued)

HYDROLOGY MONITORING/REPORTING/DATA BASE STATUS
(WATER QUALITY)

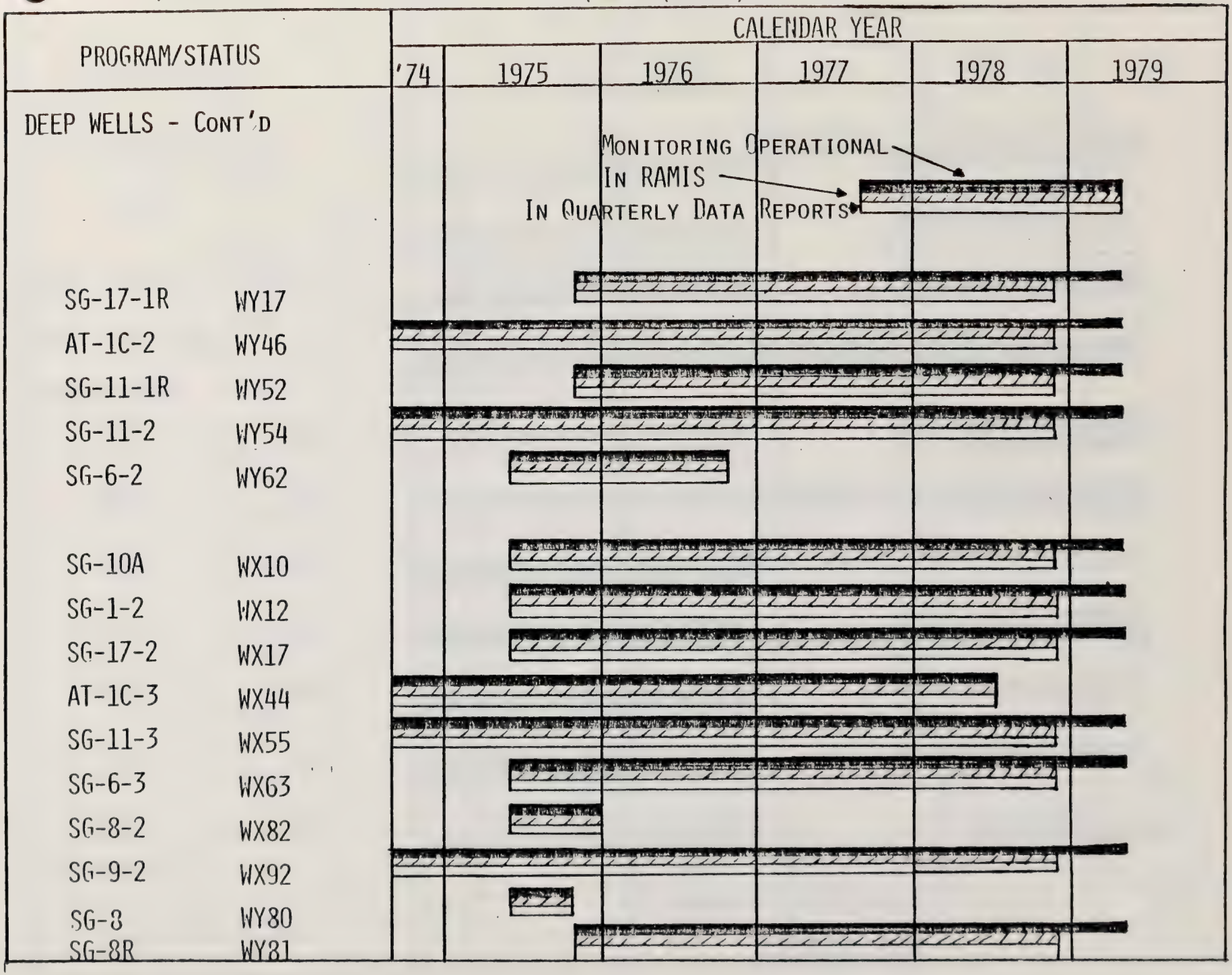

Figure IV A-5 AIR QUALITY MONITO NG/REPORTING/DATA BASE STATUS

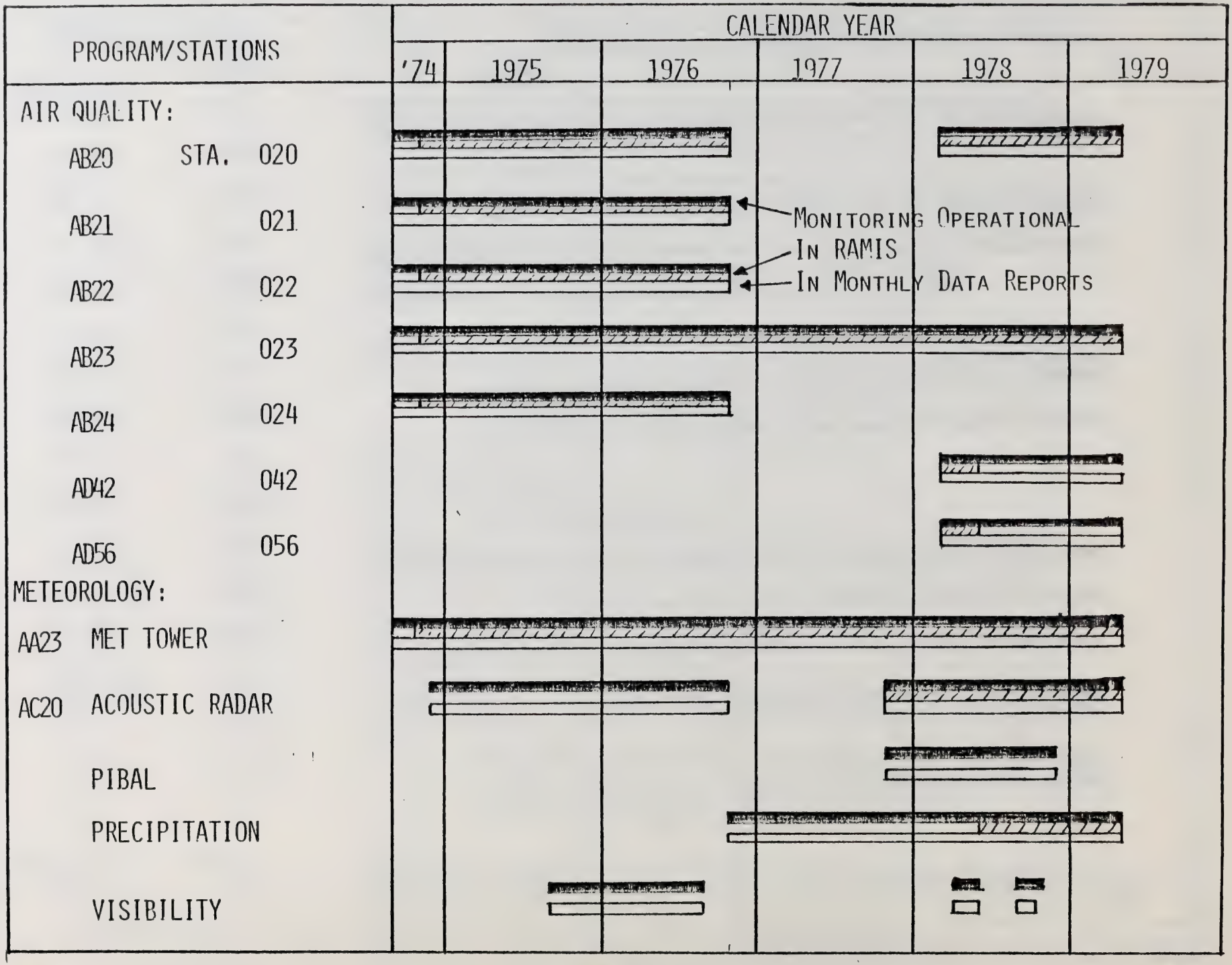

Figure IV A-6 BIOLOGY MONITORING/REPORTING/DATA BASE STATUS

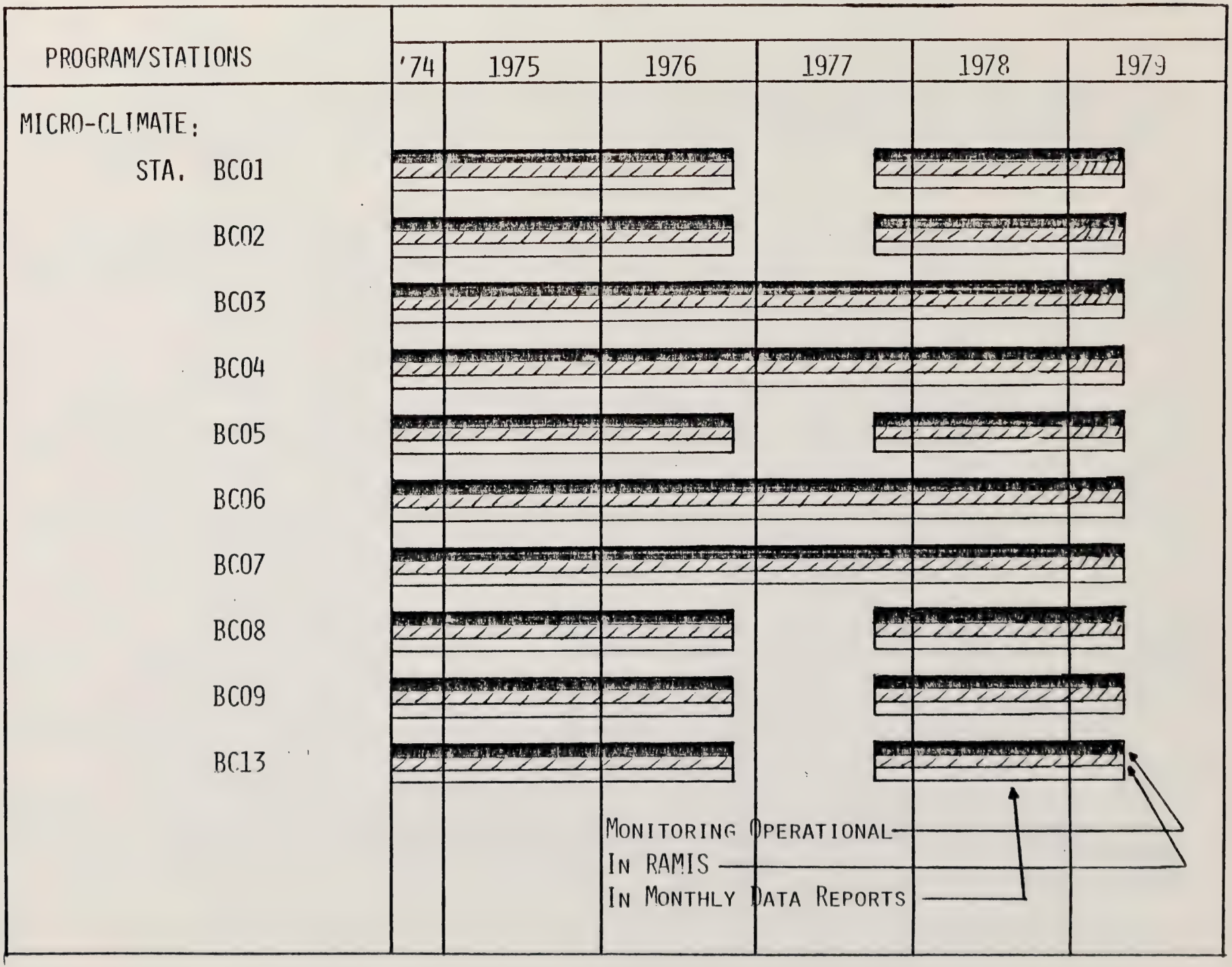

Table IV A-1

DESCRIPTION FOR MAIS FILE WTABLE (Well Water Level File)
05/02/78

LOC	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	YEAR	YR	1	S	1	I	2
2	MONTH	MO	2	S	12	I	2
3	LOCATION	LOC	2	S	9	A	4
4	GRELEVEL	GL	4	V	0	F	0.1
5	MEASPTEL	MP	4	V	0	F	0.1
6	DEPTH	DP	5		5	F	7.2

NUMBER OF RECORDS IN TABLE= 0 LINES= 0

Table IV A-2

DESCRIPTION FOR RAMIS FILE NTRNAL (Water Quality File)

05/02/75

SEQ	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	LOCATION	LOC	1	S	10	A	4
2	YEAR	YR	2	S	1	I	2
3	MONTH	MO	3	S	1	I	2
4	DUMMY1		4	S	1	F	7.3
5	ALKALINITY	ALK	4	S	1	F	7.1
6	ALUMINUM	AL	4	S	1	F	6.3
7	ARSENIC	AS	4	S	1	F	6.3
8	BACTERIA	BACT	4	S	1	F	7.3
9	BARIUM	BA	4	S	1	F	6.2
10	BICARBONATE	HCO3	4	S	1	F	7.1
11	BIOOXYDEMD	BOD	4	S	1	F	6.1
12	BORON	B	4	S	1	F	7.3
13	BROMINE	BR	4	S	1	F	6.3
14	DUMMY2		4	S	1	F	7.3
15	CADMIUM	CD	4	S	1	F	6.3
16	CALCIUM	CA	4	S	1	F	6.1
17	CARBONATE	CO3	4	S	1	F	7.1
18	CHLORIDE	CL	4	S	1	F	7.1
19	CHROMIUM	CR	4	S	1	F	6.3
20	CHEMOXYDEM	COD	4	S	1	F	7.1
21	COPPER	CU	4	S	1	F	6.3
22	DISSOXY	DO	4	S	1	F	4.1
23	DISSORGCARB	DOC	4	S	1	F	6.1
24	DUMMY3		4	S	1	F	7.3
25	FLORIDE	F	4	S	1	F	7.2
26	HARDNESS	HARD	4	S	1	F	7.1
27	IRON	FE	4	S	1	F	6.2
28	KJELDNIT	KJN	4	S	1	F	7.3
29	LEAD	PB	4	S	1	F	6.3
30	LITHIUM	LI	4	S	1	F	6.1
31	MAGNESIUM	MG	4	S	1	F	6.1
32	MANGANESE	MN	4	S	1	F	6.3
33	MERCURY	HG	4	S	1	D	6.6
34	MOLYBDENUM	MO	4	S	1	F	6.3
35	NICKEL	NI	4	S	1	F	6.3
36	NITRATE	NO3	4	S	1	F	6.2
37	OILGREASE	OLGR	4	S	1	F	7.3
38	DUMMY4		4	S	1	F	7.3
39	PH	PH	4	S	1	F	3.1
40	POTASSIUM	K	4	S	1	F	6.1
41	ALPHARADIO	RA	4	S	1	F	6.1
42	BETARADIO	BTR	4	S	1	F	6.1
43	RADIUMRADIO	RR	4	S	1	F	7.3
44	SELENIUM	SE	4	S	1	F	6.3
45	SILVER	AG	4	S	1	F	6.3
46	SODIUM	NA	4	S	1	F	7.1
47	SOLIDSDISS	TDS	4	S	1	F	7.1
48	SOLUSOLIDS	SOLS	4	S	1	F	7.1
49	SPECCOND	SPC	4	S	1	F	7.1
50	STRONTIUM	SR	4	S	1	F	4.1
51	SULFATE	SO4	4	S	1	F	6.1
52	TEMP	TEMP	4	S	1	F	4.1
53	ZINC	ZN	4	S	1	F	6.3
54	TOTORGCARB	TOC	4	S	1	F	6.1
55	PHENOLS	PHEN	4	S	1	F	6.4
56	CYANIDE	CYAN	4	S	1	F	6.3
57	AMMONIA	NH3	4	S	1	F	6.2
58	PHOSPHATE	PHOSAT	4	S	1	F	6.2

Table IV A-2 (Continued)

DESCRIPTION FOR RADIO FILE WINDOW (Water Quality File)
05/02/75

LIST	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
59	SILICA	SILIC	4	S	1	F	6.1
60	ORANIC	O	4	S	1	F	6.3
61	BORON		4	S	1	F	7.3
62	THORIUM	TH	4	S	1	F	6.3
63	CESIUM	CS	4	S	1	F	6.3
64	IODINE	I	4	S	1	F	6.3
65	ANTIMONY	SB	4	S	1	F	6.3
66	ZIRCONIUM	ZR	4	S	1	F	6.3
67	YTTRIUM	Y	4	S	1	F	6.3
68	RUBIDIUM	RB	4	S	1	F	6.3
69	GERMANIUM	GE	4	S	1	F	6.3
70	GALLIUM	GA	4	S	1	F	6.3
71	TITANIUM	TI	4	S	1	F	6.3
72	SCANDIUM	SC	4	S	1	F	6.3
73	TUNGSTEN	W	4	S	1	F	6.3
74	COBALT	CO	4	S	1	F	6.3
75	VANADIUM	V	4	S	1	F	6.3
76	BERYLLIUM	BE	4	S	1	F	6.3
77	HYDROXIDES	OH	4	S	1	F	6.1
78	CARBONYDCARB	CH	4	S	1	F	7.3
79	PALK	PA	4	S	1	F	7.1
80	MOALK	MA	4	S	1	F	7.1
81	DUMMY10		4	S	1	F	7.3

NUMBER OF RECORDS IN TABLE= 81 LINES= 81

DESCRIPTION FOR RAMIS FILE USGS
01/05/79

LIST	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	LOCATION		1		0	A	4
2	YEAR		2		0	I	2
3	MONTH		3		0	I	2
4	DAY		4		0	I	2
5	ALK		5		0	F	7.2
6	NH3		5		0	F	7.2
7	B		5		0	F	7.2
8	CA		5		0	F	7.2
9	F		5		0	F	7.2
10	FE		5		0	F	7.2
11	MG		5		0	F	7.2
12	K		5		0	F	7.2
13	SIO2		5		0	F	7.2
14	NA		5		0	F	7.2
15	HCO3		5		0	F	7.2
16	CO3		5		0	F	7.2
17	CL		5		0	F	7.2
18	SPECCOND		5		0	F	7.2
19	TDS		5		0	F	7.2
20	KJELN2		5		0	F	7.2
21	NO32		5		0	F	7.2
22	AS		5		0	F	7.2
23	MN		5		0	F	7.2
24	PO4		5		0	F	7.2
25	DOC		5		0	F	7.2
26	SOC		5		0	F	7.2
27	SO4		5		0	F	7.2
28	SED		5		0	F	7.2
29	WEATHER		5		0	F	7.2
30	PH		5		0	F	7.2
31	TEMP		5		0	F	7.2
32	FLOW		5		0	F	7.2
33	AL		5		0	F	7.2
34	BR		5		0	F	7.2
35	BA		5		0	F	7.2
36	CD		5		0	F	7.2
37	CU		5		0	F	7.2
38	CR		5		0	F	7.2
39	OG		5		0	F	7.2
40	PB		5		0	F	7.2
41	LI		5		0	F	7.2
42	HG		5		0	F	7.2
43	MO		5		0	F	7.2
44	SE		5		0	F	7.2
45	S		5		0	F	7.2
46	ZN		5		0	F	7.2
47	CN		5		0	F	7.2
48	SR		5		0	F	7.2
49	COLI45		5		0	F	7.2
50	COLI7		5		0	F	7.2
51	STREP		5		0	F	7.2
52	TCOLI		5		0	F	7.2
53	COD		5		0	F	7.2
54	BOD		5		0	F	7.2
55	PHENOL		5		0	F	7.2
56	ESCAN		5		0	F	7.2
57	DGAR		5		0	F	7.2
58	DGBR		5		0	F	7.2
59	SGAR		5		0	F	7.2
60	SGBR		5		0	F	7.2
61	HARD		5		0	F	7.2

Table IV A-4

DESCRIPTION FOR MAIN FILE STEAM (Small Trailer File)
05/02/15

LIST	FIELDNAME	STANDARD	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	TRAILER	TRL	1	S	3	A	3
2	YEAR	YR	2	S	0	A	2
3	MONTH	MO	2	S	0	A	2
4	DAY	DY	3	S	31	A	2
5	HOUR	HR	3	S	31	A	2
6	SOLRDIN	SOL	3	S	31	F	6.1
7	WINDSPED	WS	3	S	31	F	6.1
8	WINDDIR30	WD	3	S	31	F	6.1
9	RELHUM0.1D	RH	3	S	31	F	6.1
10	TEMINTRL	TIN	3	S	31	F	6.1
11	TEMOUT30	TOUT	3	S	31	F	6.1
12	HYDROGSOLR	H2S	3	S	31	F	6.1
13	LINEVOLT	VOLT	3	S	31	F	6.1
14	BARPRESS	PRES	3	S	31	F	6.1
15	WINDSTDDEV	WSD	3	S	31	F	6.1
16	RAINFALL	RAIN	3	S	31	F	6.1

NUMBER OF RECORDS IN TABLE= 16 LINES= 16

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Table IV A-5

DESCRIPTION FOR RAMS FILE LTLAIR (Large Trailer File)
05/02/15

LIST	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	TRAILER	TRL	1	S	2	A	3
2	YEAR	YR	2	S	0	A	2
3	MONTH	MO	2	S	0	A	2
4	DAY	DY	3	S	31	A	2
5	HOUR	HR	3	S	31	A	2
6	NITROGOX	NOX	3	S	31	F	6.1
7	NITRICOX	NO	3	S	31	F	6.1
8	SULFDIOX	SO2	3	S	31	F	6.1
9	WINDSP30	WS	3	S	31	F	6.1
10	WINDDIR30	WD	3	S	31	F	6.1
11	RELATHUMID	RH	3	S	31	F	6.1
12	TEMINTRL	TIN	3	S	31	F	6.1
13	TEMOUT30	TOUT	3	S	31	F	6.1
14	SOLRAD	SR	3	S	31	F	6.1
15	HYDROGSULF	H2S	3	S	31	F	6.1
16	LINEVOLT	VOLT	3	S	31	F	6.1
17	TOTHYDCARB	THC	3	S	31	F	6.1
18	METHANE	CH4	3	S	31	F	6.1
19	CARBMONOX	CO	3	S	31	F	6.1
20	OZONE	O3	3	S	31	F	6.1
21	BARPRESS	PRES	3	S	31	F	6.1
22	WINDSTDDEV	WSD	3	S	31	F	6.1
23	RAINFALL	RAIN	3	S	31	F	6.1
24	NITROGDIOX	NO2	3	S	31	F	6.1
25	NONMETHHC	NMHC	3	S	31	F	6.1

NUMBER OF RECORDS IN TABLE= 25 LINES= 25

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Table IV A-6

DESCRIPTION FOR METDATA FILE METAIR (Meteorological Tower File)
09/02/93

#	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	DECIMAL FACTOR	TYPE	LENGTH
1	YEAR	YR	1	S	1	A	2
2	TERM	TM	2	S	0	A	2
3	MONTH	MO	2	S	0	A	2
4	DAY	DY	3	S	31	A	2
5	HOUR	HR	3	S	31	A	2
6	MINSPD	MSP	3	S	31	F	6.1
7	MINDIR	MDI	3	S	31	F	6.1
8	MEANSPD	MNS	3	S	31	F	6.1
9	TEMP	TMP1	3	S	31	F	6.1
10	MINSP30	MS2	3	S	31	F	6.1
11	MINDIR30	MD2	3	S	31	F	6.1
12	MEANSP30	MN2	3	S	31	F	6.1
13	TEMP30	TMP2	3	S	31	F	6.1
14	MINSP100	MS3	3	S	31	F	6.1
15	MINDIR100	MD3	3	S	31	F	6.1
16	MEANSP100	MN3	3	S	31	F	6.1
17	TEMP100	TMP3	3	S	31	F	6.1
18	MINSP200	MS4	3	S	31	F	6.1
19	MINDIR200	MD4	3	S	31	F	6.1
20	MEANSP200	MN4	3	S	31	F	6.1
21	TEMP200	TMP4	3	S	31	F	6.1
22	DELTTEMP1	DT1	3	S	31	F	6.1
23	DELTTEMP2	DT2	3	S	31	F	6.1
24	SIGMA30	SN31	3	S	31	F	6.1
25	NORM30	NM31	3	S	31	F	6.1
26	VERTD30	VD31	3	S	31	F	6.1
27	SIGS100	SN32	3	S	31	F	6.1
28	NORMD100	NM32	3	S	31	F	6.1
29	VERTD100	VD32	3	S	31	F	6.1
30	SIGS200	SN33	3	S	31	F	6.1
31	NORMD200	NM33	3	S	31	F	6.1
32	VERTD200	VD33	3	S	31	F	6.1
33	MINSDD	MDV1	3	S	31	F	6.1
34	MINSDD30	MDV2	3	S	31	F	6.1
35	MINSDD100	MDV3	3	S	31	F	6.1
36	MINSDD200	MDV4	3	S	31	F	6.1
37	MINSDD30	MSD1	3	S	31	F	6.1
38	VINSDD30	VSD1	3	S	31	F	6.1
39	MINSDD100	MSD2	3	S	31	F	6.1
40	VINSDD100	VSD2	3	S	31	F	6.1
41	MINSDD200	MSD3	3	S	31	F	6.1
42	VINSDD200	VSD3	3	S	31	F	6.1

NUMBER OF RECORDS IN TABLE= 42 LINES= 42

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Table IV A-7

DESCRIPTION FOR RAMIS FILE MICRO (Microclimate File)
07/13/78

LIST	FIELDNAME	SYNONYM	LEVEL	LEVEL TYPE	SEGMENT FACTOR	TYPE	LENGTH
1	STATION	ST	1	S	2	A	4
2	YEAR	YR	2	S	0	I	2
3	MONTH	MO	3	S	0	I	2
4	DAY	DY	4	S	0	I	2
5	STATID	SID	5	S	0	A	2
6	TEMPMX1M	TPMX	5	S	0	F	5.1
7	TEMPMN1M	TPMN	5	S	0	F	5.1
8	SRFTPMAX	STPMX	5	S	0	F	5.1
9	SRFTPMIN	STPMN	5	S	0	F	5.1
10	PRECIP	PR	5	S	0	F	5.2
11	SNODPTH	SD	5	S	0	F	4.1
12	SNOMOIST	SM	5	S	0	F	4.1

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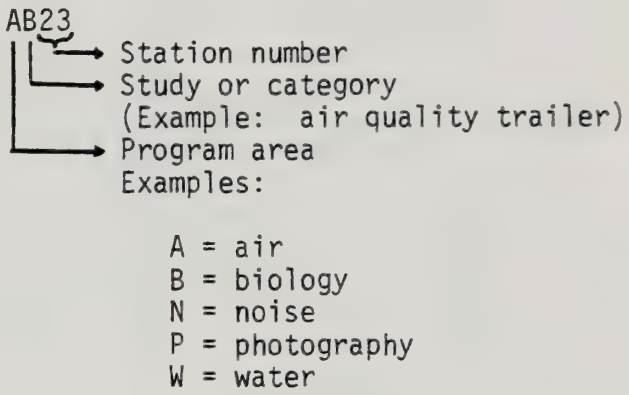
STATION COORDINATES

STATION
COMPUTER CODE

IV B STATION COMPUTER CODE

A four-digit computer station code has been designed for identifying environmental monitoring stations in RAMIS. It consists of two letters followed by two numbers:



This code is presented on Table IV B-1 for the environmental program. An attempt has been made throughout this report to refer to all stations in terms of their four-digit codes. A jacket map showing all environmental monitoring stations designated by four-digit codes can be found in Section IV C.

COMPUTER STATION CODES

I Air Quality & Meteorology

	Sta. Designation	Computer Code
Met. Tower:	@ Sta 023	AA23
Trailers:	Sta 020	AB20
	021	AB21
	022	AB22
	023	AB23
	024	AB24
Acoustic Radar	Sta 020	AC20
	021	AC21
	023	AC23
MRI and Particulates	Sta 031	AD31
	032	AD32
	033	AD33
	041	AD41
	042	AD42
	043	AD43
	044	AD44
	056	AD56

II Biology

Program	General Location	Computer Code	*Analysis Code
Deer Days Use	Between Hunter Cr. & Jimmy Gulch	BA01	PJ-CH-C
		BA02	PJ-CH-C
		BA03	PJ-CH-C
		BA04	PJ-CH-C
		BA05	PJ-CH-C
		BA06	PJ-CH-C
		BA07	PJ-CH-C
		BA08	PJ-CH-C
		BA09	PJ-CH-C
	North Side, Piceance Creek	BA10	PJ -D
		BA11	PJ -D
		BA12	PJ -D
		BA13	PJ -C
		BA14	PJ -C
		BA15	PJ -C
	South Side, Piceance Creek	BA16	PJ -D
	On Tract bet. Cottonwood & Scandard	BA17	PJ-CH-C
		BA18	PJ-CH-C
		BA19	PJ -C
	On Tract bet. Cottonwood & Sorghum	BA20	PJ-CH-D
		BA21	PJ-CH-D
		BA22	PJ -D
	On Tract bet. Sorghum & W. Fork Stewart	BA23	PJ-CH-D
		BA24	PJ
		BA25	PJ-CH-C
	On Tract bet. W. & M. Fork Stewart	BA26	PJ -C
		BA27	PJ -C
	On Tract bet. Willow & Scandard North End	BA28	PJ-CH-C
	On Tract bet. Willow & Scandard S.E.	BA29	PJ-CH-C
	On Tract bet. Cottonwood & Sorghum North	BA30	PJ-CH-C
	On Tract bet. Cottonwood & Sorghum South	BA31	PJ-CH-C

*ANALYSIS CODES:

PJ-CH-C	- Pinon Juniper, Chained, Control Station	(12)
PJ -C	- Pinon Juniper, Control Station	(6)
PJ-CH-D	- Pinon Juniper, Chained, Development Station	(3)
PJ -D	- Pinon Juniper, Development Station	(6)

Table IV B-1 (Continued)

Biology Cont'd

Program	General Location	Computer Code
Deer Mortality	North Side of Piceance Creek	BD01 BD02 BD03 BD04 BD05 BD06
	South Side of Piceance Creek	BD07 BD08 BD09 BD10
Deer Age Class	General Area of Tract	BE01
Coyotte Abundance	8 Transects for Total of 30 miles 15 mi seg. near Hunter (control) 15 mi seg. on & South of Tract (development)	BF01 BF02 thru BF08
Lagomorph Abundance	Identical Locations to deer use days	BA01 to BA31
Small Mammals	Piceance Creek (Development) On-Tract-west (Development) Piceance Creek (Control) On Tract-east (Control)	BG01 BG02 BG03 BG04
Avifauna Songbirds and Gamebirds	N.W. of Tract-near Jimmy PJ-CH-C On Tract-Scandard PJ -D On Tract-Cottonwood PJ-CH-D S. of Tract-bet. W&N Fork Stewart PJ -C	BH01 BH02 BH03 BH04
Raptors	The entire tract and surrounding study areas.	BI01
Aquatic Ecology Benthos	USGS 90306007 (Control) USGS 58 (Development) USGS 61 (Development)	WU07 WU58 WU61
Periphyton	Piceance Creek Upstream (Control) Piceance Creek Downstream (Development)	WP01 WP02 WP03
Water Quality	USGS 09306061 (Development)	WU61
Vegetation Community Structure	Chained pinyon juniper (1978)(Dev) Chained pinyon juniper (1978)(Cont) Upland sagebrush (1980)(Cont) Bottomland sagebrush (1980)(Cont) Pinyon juniper woodland (1979)(Dev) Pinyon juniper woodland (1979)(Cont)	BJ01 BJ02 BJ03 BJ04 BJ05 BJ06
Herb Productivity and Utilization	Identical locations to community structure Plus 60 range cages in random locations 20 cages on south facing PJ for baseline 5 cages for fertilization assessment	BJ01 thru BJ06 BK01 thru BK60 BK61 thru BK80 BK81 thru BK85
Shrub Productivity and Utilization	Same stations as Deer Use Days Study	BA01 thru BA31
General Condition	By aircraft over entire Tract area	Not in computer

Biology (Cont'd)

Programs: Deer Distribution & Migration and Road Kills

Mile Marker	Location	Computer Code North of Piceance Creek	Computer Code South(Meadows) of Piceance Creek
41	White River City	BN41	BM41
40	Piceance Bridge	BN40	BM40
39	Lower Canyon	BN39	BM39
38	Piceance Canyon	BN38	BM38
37	Yellow Creek	BN37	BM37
36	Stinking Springs	BN36	BM36
35	Old Bridge	BN35	BM35
34	Little Hills Turnoff	BN34	BM34
33	Old Corrals & Buildings	BN33	BM33
32	Burk Ranch	BN32	BM32
31	2 Ranch	BN31	BM31
30		BN30	BM30
29		BN29	BM29
28	Bureau of Mines	BN28	BM28
27	Ryan Gulch	BN27	BM27
26	Pump Station	BN26	BM26
25		BN25	BM25
24	Rock School	BN24	BM24
23	AQ 021	BN23	BM23
22	Pat Johnson's Ranch	BN22	BM22
21	Hunter Creek	BN21	BM21
20	PL Gate	BN20	BM20
19	AQ 020	BN19	BM19
18	Sorghum, Cottonwood	BN18	BM18
17	Stewart Gulch Rd.	BN17	BM17
16	A Q Trailer 022	BN16	BM16
15	Oldland's Ranch	BN15	BM15
14	Oldland's Ranch	BN14	BM14
13	Pond and Cabin	BN13	BM13
12	Spraque Gulch	BN12	BM12
11	Cascade Gulch	BN11	BM11
10	13 Mile Gulch	BN10	BM10
9	14 Mile Gulch	BN09	BM09
8	Schutte Gulch	BN08	BM08
7	Robinson's Ranch	BN07	BM07
6		BN06	BM06
5	2 Old Cabins (35 MPH Curve)	BN05	BM05
4	McCarthy Gulch	BN04	BM04
3	Cow Creek	BN03	BM03
2	Mahogany Outcropping	BN02	BM02
1	Woodward Ranch	BN01	BM01
0	Rio Blanco Store	BN00	BM00

Table IV B-1 (Continued)

Biology (Cont'd)

Program	General Location	Computer Code
Micro Climate	MC Sta. 1	BC01
	2	BC02
	3	BC03
	4	BC04
	5	BC05
	6	BC06
	7	BC07
	8	BC08
	9	BC09
	13	BC13

III Noise

	Station Designation	Computer Code
Traffic Noise	Sta II	NA02
	IX	NA09
	XV	NB15

IV Photography

P1	PA01
P2	PA02
P3	PA03
P4	PA04
P5	PA05
P6	PA06
P7	PA07
P8	PA08
P9	PA09
P10	PA10
P11	PA11
P12	PA12
P13	PA13
P14	PA14
P15	PA15
P16	PA16
P17	PA17
P18	PA18
P19	PA19
P20	PA20
P21	PA21
P22	PA22
P23	PA23
P24	PA24
P25	PA25
P26	PA26
P27	PA27
P28	PA28
P29	PA29
P30	PA30
P31	PA31
P32	PA32
P33	PA33
P34	PA34
P35	PA35

Table IV B-1 (Continued)

V Water

	Sta. Designation	Computer Code
USGS Stream Gauging Sta.	09306007	WU07
	36	WU36
	39	WU39
	42	WU42
	61	WU61
	50	WU50
	52	WU52
	58	WU58
	33	WU33
	25	WU25
	15	WU15
	28	WU28
	22	WU22
Alluvial Wells	A-1	WA01
	A-2	WA02
	A-3	WA03
	A-4	WA04
	A-5	WA05
	A-6	WA06
	A-7	WA07
	A-8	WA08
	A-9	WA09
	A-10	WA10
	A-11	WA11
	A-12	WA12
	A-13	WA13
Springs & Seeps	S-1	WS01
	S-2	WS02
	S-3	WS03
	S-4	WS04
	S-6	WS06
	S-7	WS07
	S-8	WS08
	S-9	WS09
	S-10	WS10
	Seep-A	WS11

Upper Aquifer Wells

Before Recompletions		After Recompletions	
Station	Code	Station	Code
CB-2	WX02		
CB-4	WX04		
SG-10A	WX10		
SG-1-2	WX12		
SG-17-2	WX17		
SG-18A	WX18		
SG-19	WX19		
SG-20	WX20		
SG-21	WX21		
AT-1C-3	WX44		
SG-11-3	WX55		
SG-6-3	WX63		
SG-8-2	WX82		
SG-9-2	WX92		
32X-12	WX32		
33X-1	WX33		

Lower Aquifer Wells

Before Recompletions		After Recompletions	
Station	Code	Station	Code
CB-1	WY01		
SG-10	WY09	SG-10R	WY10
SG-1-1	WY12		
SG-17-1	WY18	SG-17-1R	WY17
AT-1C-1	WY45		
AT-1C-2	WY46		
SG-11-1	WY51	SG-11-1R	WY52
SG-11-2	WY54		
SG-6-1	WY61		
SG-6-2	WY62		
SG-8	WY80	SG-8R	WY81
SG-9-1	WY91		
AT-1	WY44		

Seepage Monitoring Wells

Station	Code
31X-12	WW12

Shafts

Station	Code
V.E. Shaft	WZ01

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IV C STATION COORDINATES

Environmental monitoring station coordinates have been specified by the Colorado Coordinate System, by latitude and longitude, and by township and range during this report period. The above information plus elevations (taken from section topology maps) for each station are presented in Table IV C-1. In cases where stations represent biological transects several meters in length, the coordinates reported are those of a point on the map near the station label. A jacket map of the Tract area (Figure IV C-1) showing all monitoring stations on and near Tract C-b has also been prepared; stations are designated by their four-digit computer station codes.

Table IV C-1

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
I. AIR QUALITY AND METEOROLOGY				
AA23	39° 47' 43" 108° 12' 58"	T3S R96W Sec 18 NW¼, NW¼, NW¼	1,236,887' 179,957'	6950'
AB20	39° 50' 10" 108° 13' 08"	T2S R97W Sec 36 NE¼, SE¼, NE¼	1,236,563' 194,848'	6280'
AB23	39° 47' 43" 108° 12' 54"	T3S R96W Sec 18 NE¼, NW¼, NW¼	1,237,195' 179,948'	6950'
AB24	39° 48' 49" 108° 12' 20"	T3S R96W Sec 6 NE¼, SW¼, SE¼	1,240,055' 186,542'	6750'
AC20	39° 50' 08" 108° 13' 06"	T2S R97W Sec 36 NE¼, SE¼, NE¼	1,236,712' 194,641'	6310'
AD42	39° 48' 58" 108° 13' 08"	T3S R97W Sec 1 SE¼, NE¼, SE¼	1,236,339' 187,566'	6720'
AD56	39° 49' 31" 108° 12' 21"	T3S R96W Sec 6 NE¼, NW¼, NE¼	1,240,107' 190,792'	6380'
II. BIOLOGY				
BA01	39° 50' 17" 108° 16' 10"	T2S R97W Sec 34 SW¼, NE¼, NW¼	1,222,394' 195,996'	6480'
BA02	39° 50' 0" 108° 16' 16"	T2S R97W Sec 34 SE¼, SW¼, NW¼	1,221,872' 194,291'	6500'
BA03	39° 49' 31" 108° 16' 2"	T3S R97W Sec 3 NE¼, NE¼, NW¼	1,222,872' 191,323'	6640'
BA04	39° 49' 4" 108° 15' 44"	T3S R97W Sec 3 NE¼, NW¼, SE¼	1,224,191' 188,549'	6600'
BA05	39° 48' 41" 108° 16' 9"	T3S R97W Sec 3 SW¼, SE¼, SW¼	1,222,169' 186,284'	6720'
BA06	39° 48' 18" 108° 16' 16"	T3S R97W Sec 10 SE¼, SW¼, NW¼	1,221,550' 183,975'	6780'
BA07	39° 47' 54" 108° 16' 17"	T3S R97W Sec 10 NW¼, SW¼, SW¼	1,221,396' 181,550	6860'
BA08	39° 47' 32" 108° 16' 37"	T3S R97W Sec 16 NE¼, SE¼, NE¼	1,219,766' 179,374'	6860'
BA09	39° 47' 9" 108° 16' 48"	T3S R97W Sec 16 SE¼, NW¼, SE¼	1,218,835' 177,075'	6940'
BA10	39° 50' 52" 108° 14' 16"	T2S R97W Sec 25 SW¼, SW¼, NW¼	1,231,392' 199,259'	6600'
BA11	39° 50' 43" 108° 13' 43"	T2S R97W Sec 25 SE¼, NE¼, SW¼	1,233,936' 198,270'	6580'

* Plane Coordinate Projection Tables, Colorado, Special Publication No. 276, U. S. Government Printing Office.

Table IV C-1 (Continued)

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
BA12	39° 50' 31" 108° 13' 7"	T2S R97W Sec 25 SE¼, SE¼, SE¼	1,236,706' 196,970'	6600'
BA13	39° 49' 54" 108° 12' 4"	T2S R96W Sec 31 SE¼, NE¼, SE¼	1,241,504' 193,078'	6600'
BA14	39° 49' 51" 108° 10' 55"	T2S R96W Sec 33 SW¼, NW¼, SW¼	1,246,875' 192,611'	6700'
BA15	39° 49' 44" 108° 10' 32"	T2S R96W Sec 33 NW¼, SE¼, SW¼	1,248,647' 191,849'	6600'
BA16	39° 49' 54" 108° 14' 10"	T2S R97W Sec 36 NW¼, NW¼, SW¼	1,231,678' 193,379'	6500'
BA17	39° 48' 29" 108° 14' 37"	T3S R97W Sec 11 SW¼, NW¼, NE¼	1,229,307' 184,847'	6680'
BA18	39° 47' 47" 108° 14' 17"	T3S R97W Sec 14 NW¼, NE¼, NE¼	1,227,500' 180,652'	6820'
BA19	39° 47' 54" 108° 14' 2"	T3S R97W Sec 12 NE¼, SW¼, SW¼	1,227,563' 181,358'	6680'
BA20	39° 48' 16" 108° 12' 38"	T3S R96W Sec 7 SE¼, SE¼, NW¼	1,238,549' 183,247'	6860'
BA21	39° 47' 57" 108° 12' 33"	T3S R96W Sec 7 NE¼, SE¼, SW¼	2,078,442' 169,809'	6820'
BA22	39° 47' 9" 108° 12' 35"	T3S R96W Sec 18 SE¼, NE¼, SW¼	2,129,200' 165,164'	6860'
BA23	39° 48' 0" 108° 12' 6"	T3S R96W Sec 7 NE¼, SE¼, SE¼	1,240,996' 181,553'	6840'
BA24	39° 48' 52" 108° 11' 49"	T3S R96W Sec 5 NE¼, SW¼, SW¼	1,242,483' 186,771'	6640'
BA25	39° 47' 15" 108° 11' 46"	T3S, R96W Sec 17 NW¼, NE¼, SW¼	1,242,418' 176,954'	7000'
BA26	39° 48' 9" 108° 10' 51"	T3S R96W Sec 9 NW¼, NW¼, SW¼	1,246,875' 182,285'	6840'
BA27	39° 47' 5" 108° 10' 50"	T3S R96W Sec 16 NW¼, SW¼, SW¼	1,246,757' 175,810'	7020'
BA28	39° 48' 29" 108° 14' 28"	T3S R97W Sec 11 SE¼, NW¼, NE¼	1,230,009' 184,826'	6680'
BA29a	39° 47' 43" 108° 14' 14"	T3S R97W Sec 14 NE¼, NE¼, NE¼	1,230,957' 180,140'	6860'
BA29b	39° 47' 38" 108° 14' 21"	T3S R97W Sec 14 SW¼, NE¼, NE¼	1,230,396' 179,651'	6900'
BA30	39° 48' 49" 108° 12' 34"	T3S R96W Sec 6 NE¼, SE¼, SW¼	1,238,963' 186,575'	6720'

* Plane Coordinate Projection Tables, Colorado, Special Publication No. 276, U. S. Government Printing Office.

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
BA31	39° 48' 23" 108° 12' 39"	T3S R96W Sec 7 NE¼, SE¼, NW¼	1,238,493' 183,957'	6820'
BC01	39° 47' 57" 108° 11' 57"	T3S R97W Sec 8 NW¼, SW¼, SW¼	1,241,689' 181,228'	6860'
BC02	39° 47' 49" 108° 14' 21"	T3S R97W Sec 11 SW¼, SE¼, SE¼	1,230,430' 180,763'	6860'
BC03	39° 46' 56" 108° 11' 58"	T3S R96W Sec 17 SW¼, SW¼, SW¼	1,241,423' 175,061'	7100'
BC04	39° 47' 28" 108° 13' 31"	T3S R97W Sec 13 NW¼, SW¼, NE¼	1,234,266' 178,519'	6700'
BC05	39° 48' 08" 108° 11' 53"	T3S R96W Sec 8 SE¼, NW¼, SW¼	1,242,035' 182,331'	6840'
BC06	39° 47' 54" 108° 10' 43"	T3S R96W Sec 9 SE¼, SW¼, SW¼	1,247,453' 180,749'	6900'
BC07	39° 47' 45" 108° 13' 15"	T3S R97W Sec 13 NW¼, NE¼, NE¼	1,235,567' 180,200'	6940'
BC08	39° 50' 38" 108° 14' 20"	T2S R97W Sec 25 NW¼, SW¼, SW¼	1,231,036' 197,853'	6350'
BC09	39° 49' 30" 108° 11' 52"	T3S R96W Sec 5 NE¼, NW¼, NW¼	1,242,366' 190,622'	6400'
BC13	39° 47' 19" 108° 11' 19"	T3S R96W Sec 17 NE¼, NW¼, SE¼	1,244,537' 177,295'	6700'
BD01	39° 50' 57" 108° 14' 46"	T2S R97W Sec 26 SE¼, SE¼, NE¼	1,229,069' 199,837'	6380'
BD02	39° 50' 47" 108° 13' 55"	T2S R97W Sec 25 NW¼, NE¼, SW¼	1,233,013' 198,703'	6370'
BD03	39° 50' 34" 108° 12' 57"	T2S R96W Sec 30 SW¼, SW¼, SW¼	1,237,495' 197,249'	6420'
BD04	39° 50' 04" 108° 12' 17"	T2S R96W Sec 31 SW¼, SE¼, NE¼	1,240,521' 194,120'	6420'
BD05	39° 50' 08" 108° 11' 41"	T2S R96W Sec 32 NW¼, SE¼, NW¼	1,243,340' 194,439'	6420'
BD06	39° 49' 45" 108° 10' 36"	T2S R96W Sec 33 NW¼, SE¼, SW¼	1,248,338' 191,959'	6500'
BD07	39° 49' 52" 108° 13' 16"	T2S R97W Sec 36 SW¼, NE¼, SE¼	1,235,883' 193,047'	6380'
BD08	39° 49' 45" 108° 12' 44"	T2S R96W Sec 31 NW¼, SE¼, SW¼	1,238,357' 192,263'	6360'
BD09	39° 49' 25" 108° 12' 28"	T3S R96W Sec 6 SW¼, NW¼, NE¼	1,239,543' 190,202'	6410'

* Plane Coordinate Projection Tables, Colorado, Special Publication No. 276, U. S. Government Printing Office.

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
BD10	39° 49' 18" 108° 11' 49"	T3S R96W Sec 5 NE¼, SW¼, NW¼	1,242,563' 189,401'	6420'
	Coordinates Picked Near Transect Map Code Label			
BF01	39° 47' 54" 108° 16' 34"	T3S R97W Sec 9 NE¼, SE¼, SE¼	1,220,070' 181,592'	6900'
BF02	39° 48' 02" 108° 14' 23"	T3S R97W Sec 11 SW¼, NE¼, SE¼	1,230,315' 182,083'	6800'
BF03	39° 46' 41" 108° 13' 30"	T3S R97W Sec 24 NW¼, SW¼, NE¼	1,234,198' 173,764'	6860'
BF04	39° 46' 25" 108° 13' 04"	T3S R97W Sec 24 NE¼, NE¼, SE¼	1,236,177' 172,083'	7190'
BF05	39° 47' 30" 108° 12' 07"	T3S R96W Sec 18 NE¼, SE¼, NE¼	1,240,826' 178,521'	6980'
BF06	39° 47' 44" 108° 11' 42"	T3S R96W Sec 17 NW¼, NE¼, NW¼	1,242,819' 179,878'	6940'
BF07	39° 46' 09" 108° 11' 49"	T3S R96W Sec 20 SW¼, SE¼, SW¼	1,241,981' 170,286'	6820'
BF08	39° 47' 35" 108° 10' 46"	T3S R96W Sec 16 NE¼, SW¼, NW¼	1,247,161' 178,835'	6950'
BG01	39° 50' 17" 108° 14' 0"	T2S R97W Sec 36 SW¼, NE¼, NW¼	1,367,342' 191,890'	6360'
BG02	39° 47' 48" 108° 13' 21"	T3S R97W Sec 13 NE¼, NW¼, NE¼	1,235,108' 180,518'	6940'
BG03	39° 49' 39" 108° 12' 08"	T2S R96W Sec 31 SE¼, SE¼, SE¼	1,371,896' 187,928'	6300'
BG04	39° 47' 40" 108° 10' 54"	T3S R96W Sec 16 SW¼, NW¼, NW¼	1,246,552' 179,359'	6860'
BH01	39° 48' 45" 108° 16' 0"	T3S R97W Sec 5 SE¼, SE¼, SW¼	1,222,883' 186,667'	6660'
BH02	39° 47' 49" 108° 13' 35"	T3S R97W Sec 12 SW¼, SW¼, SE¼	1,234,019' 180,653'	6780'
BH03	39° 48' 6" 108° 12' 58"	T3S R96W Sec 7 SW¼, NW¼, SW¼	1,236,958' 182,283'	6840'
BH04	39° 46' 43" 108° 10' 56"	T3S R96W Sec 20 NE¼, SE¼, NE¼	1,246,222' 173,599'	7120'
BJ01	39° 47' 57" 108° 11' 57"	T3S R96W Sec 8 NW¼, SW¼, SW¼	1,241,689' 181,228'	6860'
BJ02	39° 47' 45" 108° 14' 21"	T3S R97W Sec 14 NW¼, NE¼, NE¼	1,230,418' 180,359'	6870'

* Plane Coordinate Projection Tables, Colorado, Special Publication No. 276, U. S. Government Printing Office.

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
BJ03	39° 46' 58" 108° 12' 01"	T3S R96W Sec 17 SW¼, SW¼, SW¼	1,241,197' 175,270'	7100'
BJ04	39° 47' 24" 108° 13' 27"	T3S R97W Sec 13 SE¼, SW¼, NE¼	1,234,565' 178,105'	6700'
BJ05	39° 48' 08" 108° 11' 53"	T3S R96W Sec 8 SE¼, NW¼, SW¼	1,242,035' 182,331'	6840'
BJ06	39° 47' 54" 108° 10' 41"	T3S R96W Sec 9 SE¼, SW¼, SW¼	1,247,609' 180,745'	6880'
III. NOISE				
NA02	39° 50' 42" 108° 14' 19"	T2S R97W Sec 25 SW¼, NW¼, SW¼	1,231,127' 198,255'	6520'
NA09	39° 49' 08" 108° 14' 16"	T3S R97W Sec 2 SE¼, SE¼, NE¼	1,231,067' 188,741'	6660'
NB15	39° 49' 04" 108° 13' 26"	T3S R97W Sec 1 NE¼, NW¼, SE¼	1,234,954' 188,216'	6720'
IV. PHOTOGRAPHY				
PA01	39° 51' 50" 108° 11' 21"	T2S R96W Sec 20 SW¼, SW¼, NE¼	1,245,213' 204,708'	7420'
PA02	39° 50' 43" 108° 14' 04"	T2S R97W Sec 25 SE¼, NW¼, SW¼	1,232,299' 198,320'	6560'
PA03	39° 50' 23" 108° 14' 06"	T2S R97W Sec 36 NE¼, NW¼, NW¼	1,232,081' 196,302'	6300'
PA04	39° 49' 58" 108° 13' 10"	T2S R97W Sec 36 NE¼, NE¼, SE¼	1,236,370' 193,639'	6410'
PA05	39° 49' 03" 108° 14' 40"	T3S R97W Sec 2 NW¼, NW¼, SE¼	1,229,179' 188,293'	6410'
PA06	39° 48' 55" 108° 14' 04"	T3S R97W Sec 1 SW¼, NW¼, SW¼	1,231,962' 187,397'	6770'
PA07	39° 48' 55" 108° 13' 56"	T3S R97W Sec 1 SE¼, NW¼, SW¼	1,232,586' 187,378'	6770'
PA08	39° 49' 19" 108° 13' 48"	T3S R97W Sec 1 NW¼, SE¼, NW¼	1,233,285' 189,786'	6760'
PA09	39° 48' 54" 108° 12' 19"	T3S R96W Sec 6 NE¼, SW¼, SE¼	1,240,149' 187,045'	6750'
PA10	39° 49' 30" 108° 11' 49"	T3S R96W Sec 5 NE¼, NW¼, NW¼	1,242,599' 190,615'	6430'
PA11	39° 48' 41" 108° 11' 46"	T3S R96W Sec 5 SW¼, SE¼, SW¼	1,242,683' 185,652'	6700'

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Table IV C-1 (Continued)

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
PA12	39° 48' 47" 108° 11' 27"	T3S R96W Sec 5 SW¼, SW¼, SE¼	1,244,183' 186,214'	6740'
PA13	39° 49' 44" 108° 11' 16"	T2S R96W Sec 32 SE¼, SW¼, SE¼	1,245,216' 191,952'	6500'
PA14	39° 48' 22" 108° 14' 28"	T3S R97W Sec 11 NE¼, SW¼, NE¼	1,229,987' 184,118'	6700'
PA15	39° 48' 20" 108° 14' 01"	T3S R97W Sec 12 NE¼, SW¼, NW¼	1,232,087' 183,850'	6670'
PA16	39° 47' 56" 108° 13' 47"	T3S R97W Sec 12 NE¼, SE¼, SW¼	1,233,104' 181,390'	6730'
PA17	39° 48' 36" 108° 13' 18"	T3S R97W Sec 12 NW¼, NE¼, NE¼	1,235,491' 185,365'	6760'
PA18	39° 48' 31" 108° 13' 09"	T3S R97W Sec 12 SW¼, NE¼, NE¼	1,236,178' 184,838'	6820'
PA19	39° 47' 51" 108° 12' 56"	T3S R96W Sec 7 SW¼, SW¼, SW¼	1,237,068' 180,762'	6870'
PA20	39° 48' 05" 108° 12' 46"	T3S R96W Sec 7 SW¼, NE¼, SW¼	1,237,891' 182,154'	6890'
PA21	39° 47' 46" 108° 12' 03"	T3S R96W Sec 18 NE¼, NE¼, NE¼	1,241,187' 180,130'	6920'
PA22	39° 48' 16" 108° 11' 32"	T3S R96W Sec 8 SE¼, SE¼, NW¼	1,243,698' 183,090'	6860'
PA23	39° 48' 39" 108° 10' 56"	T3S R96W Sec 8 NE¼, NE¼, NE¼	1,246,577' 185,331'	6540'
PA24	39° 47' 58" 108° 10' 42"	T3S R96W Sec 9 NE¼, SW¼, SW¼	1,247,543' 181,152'	6880'
PA25	39° 48' 10" 108° 10' 24"	T3S R96W Sec 9 NE¼, NE¼, SW¼	1,248,984' 182,323'	6520'
PA26	39° 47' 26" 108° 13' 37"	T3S R97W Sec 13 SE¼, SE¼, NW¼	1,233,791' 178,331'	6770'
PA27	39° 47' 23" 108° 12' 57"	T3S R96W Sec 18 SW¼, SW¼, NW¼	1,236,903' 177,932'	6980'
PA28	39° 47' 03" 108° 12' 57"	T3S R96W Sec 18 NW¼, SW¼, SW¼	1,236,841' 175,909'	7010'
PA29	39° 46' 39" 108° 11' 19"	T3S R96W Sec 17 SW¼, SW¼, SE¼	1,244,415' 173,249'	6700'
PA30	39° 46' 57" 108° 10' 47"	T3S R96W Sec 16 SW¼, SW¼, SW¼	1,246,967' 174,994'	7120'
PA31	39° 47' 45" 108° 10' 43"	T3S R96W Sec 16 NE¼, NW¼, NW¼	1,247,426' 179,839'	6920'

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Table IV C-1 (Continued)

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
PA32	39° 47' 26" 108° 10' 18"	T3S R96W Sec 16 SW¼, SW¼, NE¼	1,249,318' 177,859'	6640'
PA33	39° 46' 58" 108° 13' 00"	T3S R96W Sec 18 SW¼, SW¼, SW¼	1,236,591' 175,411'	7060'
PA34	39° 46' 53" 108° 12' 03"	T3S R96W Sec 19 NE¼, NE¼, NE¼	1,241,030' 174,769	7120'
PA35	39° 45' 19" 108° 13' 05"	T3S R97W Sec 25 NE¼, SE¼, SE¼	1,235,894' 165,410'	7400'
V. WATER				
WA01	39° 50' 32" 108° 13' 53"	T2S R97W Sec 25 SW¼, SE¼, SW¼	1,233,122' 197,181'	6300'
WA02	39° 50' 10" 108° 14' 36"	T2S R97W Sec 35 NE¼, SW¼, NE¼	1,229,701' 195,060'	6280'
WA03	39° 48' 48" 108° 14' 31"	T3S R97W Sec 2 NE¼, SW¼, SE¼	1,229,834' 186,755'	6460'
WA04	39° 47' 26" 108° 13' 34"	T3S R97W Sec 13 SW¼, SW¼, NE¼	1,234,025' 178,324'	6700'
WA05	39° 50' 4" 108° 13' 14"	T2S R97W Sec 36 SW¼, SE¼, NE¼	1,236,076' 194,256'	6330'
WA06	39° 49' 36" 108° 12' 25"	T2S R96W Sec 31 SE¼, SW¼, SE¼	1,239,811 191,307'	6360'
WA07	39° 49' 32" 108° 11' 57"	T3S R96W Sec 5 NW¼, NW¼, NW¼	1,241,982' 190,836'	6370'
WA08	39° 49' 11" 108° 11' 8"	T3S R96W Sec 5 SW¼, SE¼, NE¼	1,245,739' 188,596'	6400'
WA09	39° 48' 10" 108° 10' 22"	T3S R96W Sec 9 NE¼, NE¼, SW¼	1,249,140' 182,318'	6420'
WA10	39° 47' 24" 108° 10' 23"	T3S R96W Sec 16 SE¼, SE¼, NW¼	1,248,922' 177,668'	6580'
WA11	39° 48' 18" 108° 11' 5"	T3S R96W Sec 8 SW¼, SE¼, NE¼	1,245,810' 183,229'	6550'
WA12	39° 46' 57" 108° 11' 24"	T3S R96W Sec 17 SW¼, SW¼, SE¼	1,244,080' 175,081	6700'
WA13	39° 47' 13" 108° 12' 34"	T3S R96W Sec 18 SW¼, NW¼, SE¼	2,103,827' 165,450'	6840'
WP01	39° 49' 35" 108° 11' 01"	T2S R96W Sec 32 SE¼, SE¼, SE¼	1,373,996' 183,393'	6380
WP02	39° 49' 40" 108° 12' 0"	T2S R96W Sec 32 NW¼, SW¼, SW¼	1,372,354' 188,018	6300'
WP03	39° 51' 03" 108° 15' 27"	T2S R97W Sec 26 NW¼, SW¼, NW¼	1,362,499' 196,669'	6220'

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ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
WS01	39° 49' 30" 108° 11' 01"	T3S R96W Sec 5 NE¼, NE¼, NE¼	1,246,343' 190,501'	6380'
WS02	39° 48' 04" 108° 10' 16"	T3S R96W Sec 9 SW¼, NW¼, SE¼	1,249,590' 181,697'	6540'
WS03	39° 49' 32" 108° 11' 08"	T3S R96W Sec 5 NW¼, NE¼, NE¼	1,245,803' 190,720'	6360'
WS04	39° 48' 03" 108° 10' 13"	T3S R96W Sec 9 NE¼, SW¼, SE¼	1,249,821' 181,589'	6550'
WS06	39° 50' 23" 108° 14' 38"	T2S R97W Sec 35 NE¼, NW¼, NE¼	1,229,586' 196,379'	6260'
WS07	39° 50' 18" 108° 14' 33"	T2S R97W Sec 35 SW¼, NE¼, NE¼	1,229,960' 195,862'	6280'
WS08	39° 48' 57" 108° 14' 47"	T3S R97W Sec 11 SE¼, NE¼, SE¼	1,228,615' 187,703'	6400'
WS09	39° 48' 04" 108° 14' 50"	T3S R97W Sec 14 NW¼, NE¼, SW¼	1,228,2]5' 182,350'	6550'
WS10	39° 47' 16" 108° 15' 01"	T3S R97W Sec 2 SE¼, NE¼, SW¼	1,227,206' 177,523'	6580'
WU07	39° 49' 31" 108° 10' 58"	T3S R96W Sec 5 NE¼, NE¼, NE¼	1,246,580' 190,595'	6400'
WU15	39° 47' 20" 108° 10' 23"	T3S R96W Sec 16 NE¼, NE¼, SW¼	1,248,910' 177,264	6600'
WU22	39° 48' 45" 108° 11' 0"	T3S R96W Sec 5 SE¼, SE¼, SE¼	1,246,283' 185,947'	6460'
WU25	39° 46' 56" 108° 11' 21"	T3S R96W Sec 17 SE¼, SW¼, SE¼	1,244,311' 174,973'	6680
WU28	39° 48' 42" 108° 10' 59"	T3S R96W Sec 5 SE¼, SE¼, SE¼	1,246,352' 185,642'	6460'
WU33	39° 47' 14" 108° 12' 33"	T3S R96W Sec 18 SE¼, NE¼, SW¼	2,078,455' 165,458'	6860'
WU36	39° 49' 28" 108° 11' 54"	T3S R96W Sec 5 NE¼, NW¼, NW¼	1,242,203' 190,424'	6380'
WU39	39° 49' 34" 108° 12' 28"	T2S R96W Sec 31 SW¼, SW¼, SE¼	1,239,570' 191,112'	6380'
WU42	39° 50' 3" 108° 13' 12"	T2S R97W Sec 36 SE¼, SE¼, NE¼	1,236,229' 194,150'	6430'
WU50	39° 47' 42" 108° 13' 39"	T3S R97W Sec 13 NE¼, NE¼, NW¼	1,233,685' 179,954'	6660'
WU52	39° 48' 49" 108° 14' 33"	T3S R97W Sec 2 NE¼, SW¼, SE¼	1,229,682' 186,860'	6460'
WU58	39° 50' 12" 108° 14' 37"	T2S R97W Sec 35 NE¼, SW¼, NE¼	1,229,629' 195,264'	6280'
WU61	39° 51' 3" 108° 15' 31"	T2S R97W Sec 27 NE¼, SE¼, NE¼	1,225,579' 200,553'	6220'

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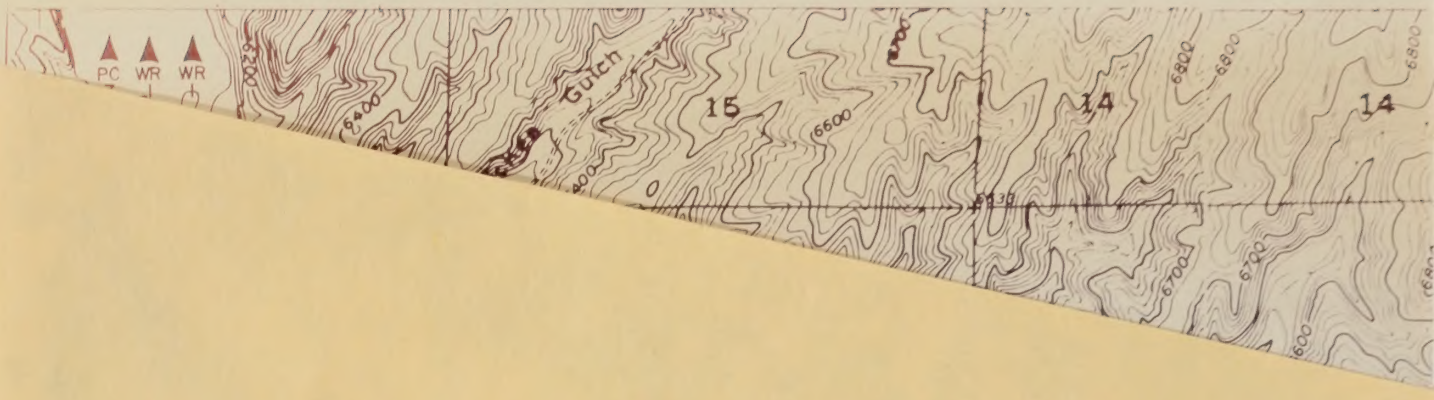
Table IV C-1 (Continued)

ENVIRONMENTAL DATA COLLECTION STATION COORDINATES

STATION CODE+	LATITUDE & LONGITUDE	TOWNSHIP & RANGE	STATE COORDINATES*	ELEVATION
WW12	39° 48' 42" 108° 13' 27"	T3S R97W Sec 1 SE¼, SW¼, SE¼	1,368,025' 182,257'	6780'
WX02	39° 48' 54" 108° 12' 22"	T3S R96W Sec 6 SE¼, NW¼, SE¼	1,239,915' 187,052'	6730'
WX03	39° 48' 51" 108° 11' 27"	T3S R96W Sec 5 NW¼, SW¼, SE¼	1,244,195' 186,618'	6740'
WX04	39° 47' 11" 108° 11' 50"	T3S R96W Sec 17 SE¼, NW¼, SW¼	1,242,094' 176,559'	7040'
WX10	39° 47' 46" 108° 13' 06"	T3S R97W Sec 13 NE¼, NE¼, NE¼	1,236,272' 180,280'	6950'
WX12/WY12	39° 48' 48" 108° 14' 35"	T3S R97W Sec 2 NE¼, SW¼, SE¼	1,229,522' 186,764'	6440'
WX17/WY17	39° 46' 57" 108° 10' 50"	T3S R96W Sec 16 SW¼, SW¼, SW¼	1,246,733' 175,001'	7040'
WX19	39° 49' 31" 108° 11' 58"	T3S R96W Sec 5 NW¼, NW¼, NW¼	1,241,901' 190,737'	6370'
WX20	39° 49' 33" 108° 12' 24"	T2S R96W Sec 31 SE¼, SW¼, SE¼	1,239,879' 191,001'	6350'
WX21	39° 46' 57" 108° 13' 28"	T3S R97W Sec 13 SE¼, SW¼, SE¼	1,234,403' 175,377'	6870'
WX32	39° 48' 26" 108° 13' 34"	T3S R97W Sec 12 NW¼, SW¼, NE¼	1,234,212' 184,392'	6840'
WX33	39° 48' 59" 108° 13' 27"	T3S R97W Sec 1 SE¼, NW¼, SE¼	1,234,861' 187,7]3'	6720'
WX44/WY45 /WY46	39° 48' 03" 108° 12' 47"	T3S R96W Sec7 SW¼, NE¼, SW¼	1,237,807' 181,954'	6910'
WX55/WY52 /WY54	39° 47' 59" 108° 12' 05"	T3S R96W Sec 7 SE¼, SE¼, SE¼	1,371,811' 177,808'	6900'
WX63/WY61 /WY62 /WY81	39° 48' 13" 108° 12' 31"	T3S R96W Sec 7 NW¼, NW¼, SE¼	1,239,086' 182,927'	6870'
WX92/WY91	39° 47' 49" 108° 14' 18"	T3S R97W Sec 11 SE¼, SE¼, SE¼	1,230,664' 180,756'	6870'
WY01	39° 48' 51" 108° 14' 01"	T3S R97W Sec 1 NE¼, SW¼, SW¼	1,232,184' 186,986'	6780'
WY10	39° 47' 46" 108° 13' 05"	T3S R97W Sec 13 NE¼, NE¼, NE¼	1,236,350' 180,277'	6950'
WY81	39° 48' 12" 108° 10' 23"	T3S R96W Sec 9 NE¼, NE¼, SW¼	1,249,068' 182,523'	6540'
WZ01	39° 48' 59" 108° 13' 27"	T3S R96W Sec 1 SE¼, NW¼, SE¼	1,234,212' 184,392'	6720

*Plane Coordinate Projection Tables, Colorado, Special Publication No. 276, U.S. Government Printing Office.

+Multiiple station codes at the same location indicates samples taken at different depths.


PC
WR
WR
Gulch
15
14
14
6400
6600
6800
6700

R 97 W

R 96 W

T 2 S

T 3 S

COLLINS GULCH OVERLOOK

Stewart School

Walter Oldland Ranch

Redd Ranch

LOWER WILLOW LAKE

UPPER WILLOW LAKE

Piceance Creek

Hunter Creek

Willow Creek

Scandard Gulch

Little Scandard Gulch

Cottonwood Gulch

Gardenhire Gulch

Collins Gulch

Jessup Gulch

Stewart Gulch

Sorghum Gulch

Middle Fork Piceance Creek

East Fork Piceance Creek

West Fork Piceance Creek

Twin Gulch

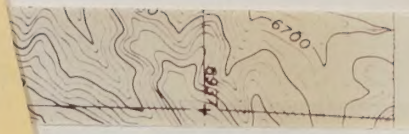
Big Gulch

Fed 2-b

FIG IV C-1

DEVELOPMENT MONITORING ACTIVITIES

REVISION 1
MAR 8, 1979
REVISION 2
JUL 1, 1979


6700